FCC PART 15.247

TEST REPORT

For

SWAGTEK

10205 NW 19th Street STE101,Miami,Florida,United States

FCC ID: O55183517

Report Type:	Product Name:
Original Report	1.77 inch Feature Bar Phone

Report Number:	RDG171013014-00B
Report Date:	2017-11-01
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

Note: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (Dongguan).

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The **SWAGTEK**'s product, model number: **LOGIC Z2 (FCC ID: O55183517)** (the "EUT") in this report was a **1.77 inch Feature Bar Phone,** which was measured approximately: 11.0 cm (L) x 4.6 cm (W) x 1.3 cm (H), DC3.7V from Battery or DC 5V from adapter.

Adapter information:
Input: AC 100-240V 50/60Hz,0.2A
Output: DC5.0V 0.5A

Note: The series product, model iSWAG DUET, UNONU U9 and LOGIC Z2 are electrically identical, the difference between them is model name, we selected LOGIC Z2 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: 171013014 (Assigned by BACL,Dongguan). The EUT was received on 2017-10-13.

Objective

This report is prepared on behalf of **SWAGTEK** in accordance with Part 2, Subpart J, Part 15, Subparts A and C of the Federal Communications Commission's rules.

The tests were performed in order to determine the Bluetooth BDR and EDR mode of EUT compliance with FCC Rules Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 rules.

Related Submittal(s)/Grant(s)

FCC Part 15B JBP submissions with FCC ID: O55183517.
FCC Part 22H, 24E PCE submissions with FCC ID: O55183517.

Test Methodology

All measurements detailed in this Test Report were performed in accordance with ANSI C63.10-2013 "American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices".

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~26.5GHz: 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 system was configured for testing in engineering mode.

EUT Exercise Software

The system configured the maximum power level as default setting.

Equipment Modifications

No modification was made to the EUT.

Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
USB Cable	yes	No	1.0	EUT	Adapter

Block Diagram of Test Setup
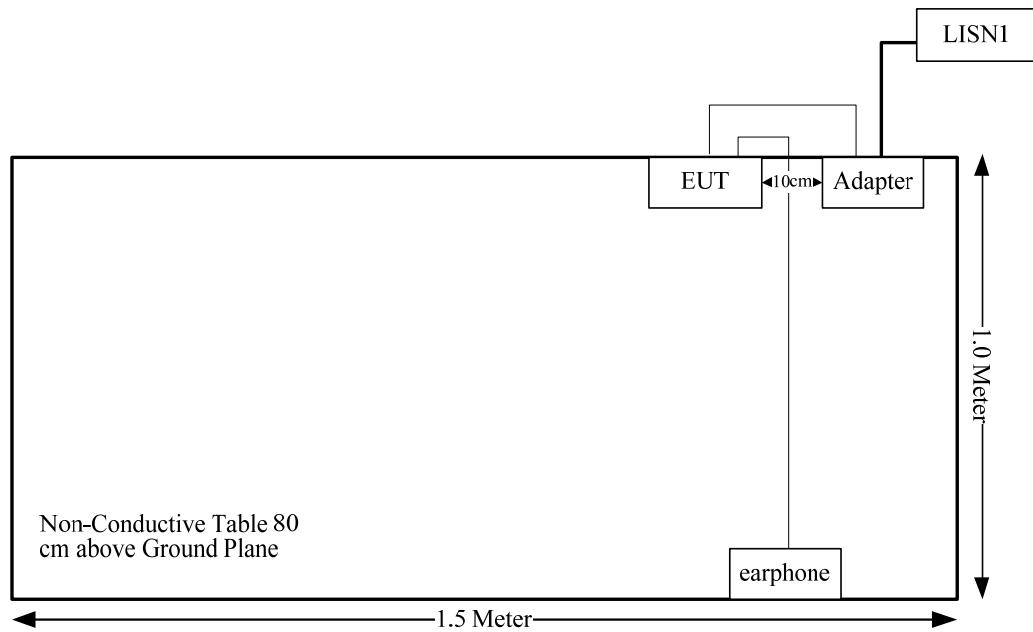
SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.247 (i) & §1.1310 & §2.1093	RF Exposure	Compliance
§15.203	Antenna Requirement	Compliance
§15.207 (a)	Conducted Emissions	Compliance
§15.205, §15.209, §15.247(d)	Spurious Emissions	Compliance
§15.247 (a)(1)	20 dB Bandwidth	Compliance
§15.247(a)(1)	Channel Separation Test	Compliance
§15.247(a)(1)(iii)	Time of Occupancy (Dwell Time)	Compliance
§15.247(a)(1)(iii)	Quantity of hopping channel Test	Compliance
§15.247(b)(1)	Peak Output Power Measurement	Compliance
§15.247(d)	Band Edges	Compliance

FCC §15.247 (i) & §1.1310 & §2.1093- RF EXPOSURE

Applicable Standard

According to§15.247(i) and §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

According to KDB447498 D01 General RF Exposure Guidance v06:

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)]
≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where
  • f(GHz) is the RF channel transmit frequency in GHz
  • Power and distance are rounded to the nearest mW and mm before calculation
  • The result is rounded to one decimal place for comparison
  • 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test exclusion.

Measurement Result

The max conducted power including tune-up tolerance is 8.0 dBm (6.31 mW).
[(max. power of channel, mW)/(min. test separation distance, mm)][√f(GHz)]
=6.31/5*(√2.480) = 2.0< 3.0

So the stand-alone SAR evaluation is not necessary.

FCC §15.203 - ANTENNA REQUIREMENT

Applicable Standard

According to FCC § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Antenna Connector Construction

The EUT has one internal antenna arrangement for BT, and the antenna gain is 0 dBi, fulfill the requirement of this section. Please refer to the EUT photos.

Result: Compliance.

FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC§15.207(a)

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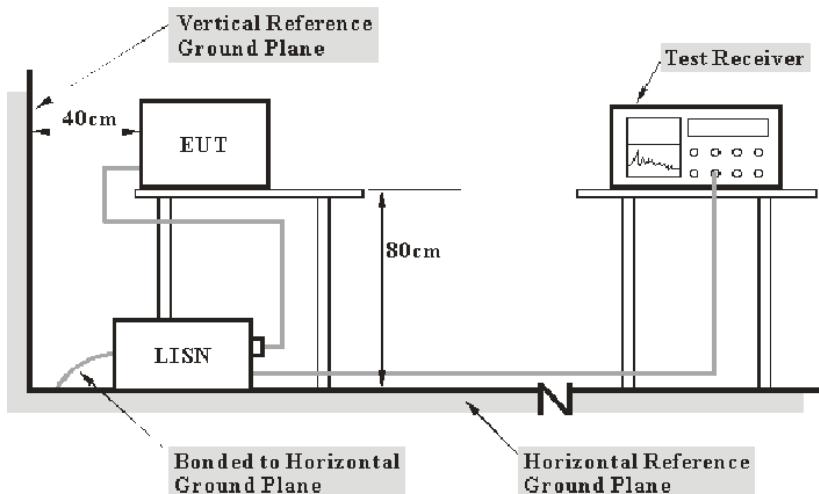
Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

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

Test Procedure

During the conducted emission test, the adapter was connected to the outlet of 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.

Corrected Amplitude & Margin Calculation

The basic equation is as follows:

$$V_C = V_R + A_C + VDF$$

Herein,
V_C: corrected voltage amplitude
V_R: reading voltage amplitude
A_c: attenuation caused by cable loss
VDF: voltage division factor of AMN or ISN

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	2017-09-05	2018-09-05

* 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:	26.5 °C
Relative Humidity:	50 %
ATM Pressure:	99.4 kPa

The testing was performed by Gaochao Gong on 2017-10-16.

Test Mode: Transmitting

AC120V, 60 Hz, Line:
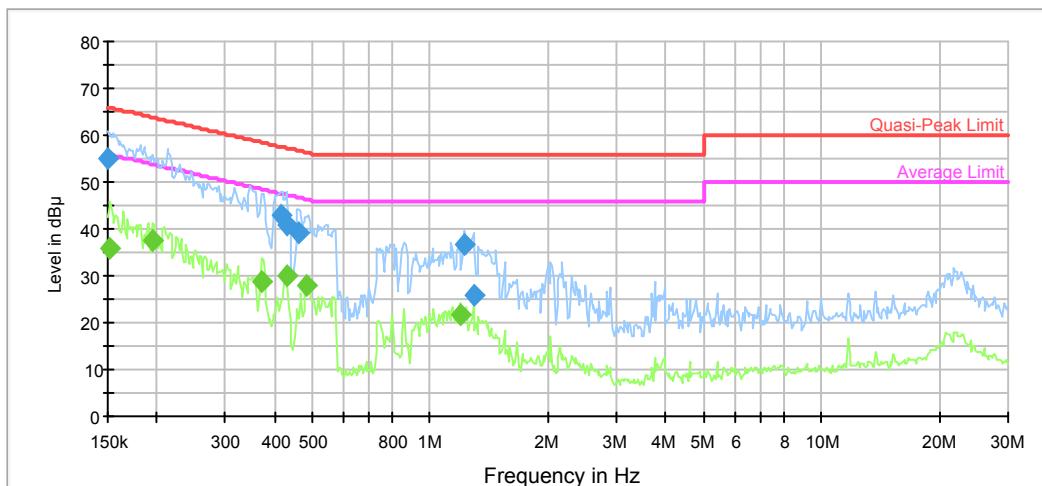
Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.150000	55.0	9.000	L1	11.2	11.0	66.0	Compliance
0.415949	42.7	9.000	L1	10.0	14.8	57.5	Compliance
0.432855	40.7	9.000	L1	9.9	16.5	57.2	Compliance
0.461346	39.1	9.000	L1	9.9	17.6	56.7	Compliance
1.229340	36.6	9.000	L1	9.8	19.4	56.0	Compliance
1.289541	26.0	9.000	L1	9.8	30.0	56.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.152410	35.7	9.000	L1	11.2	20.2	55.9	Compliance
0.195114	37.5	9.000	L1	10.7	16.3	53.8	Compliance
0.372042	28.7	9.000	L1	10.0	19.8	48.5	Compliance
0.429420	29.9	9.000	L1	9.9	17.4	47.3	Compliance
0.483938	27.9	9.000	L1	9.9	18.4	46.3	Compliance
1.190776	21.8	9.000	L1	9.8	24.2	46.0	Compliance

AC120V, 60 Hz, Neutral:
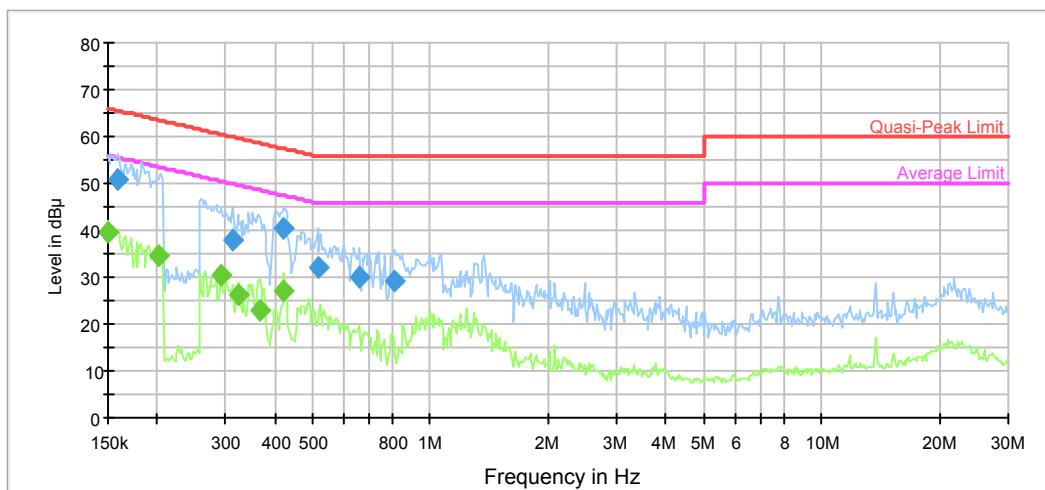
Frequency (MHz)	QuasiPeak (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.158604	50.7	9.000	N	11.1	14.8	65.5	Compliance
0.312220	38.0	9.000	N	10.1	21.9	59.9	Compliance
0.422630	40.6	9.000	N	9.9	16.8	57.4	Compliance
0.515791	32.2	9.000	N	9.9	23.8	56.0	Compliance
0.655073	30.2	9.000	N	9.8	25.8	56.0	Compliance
0.812315	29.0	9.000	N	9.8	27.0	56.0	Compliance

Frequency (MHz)	Average (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.150000	39.6	9.000	N	11.2	16.4	56.0	Compliance
0.203045	34.7	9.000	N	10.6	18.8	53.5	Compliance
0.292938	30.5	9.000	N	10.2	19.9	50.4	Compliance
0.322331	26.1	9.000	N	10.1	23.5	49.6	Compliance
0.366160	23.1	9.000	N	10.0	25.5	48.6	Compliance
0.422630	27.2	9.000	N	9.9	20.2	47.4	Compliance

FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS

Applicable Standard

FCC §15.247 (d); §15.209; §15.205;

EUT Setup

Below 1GHz:
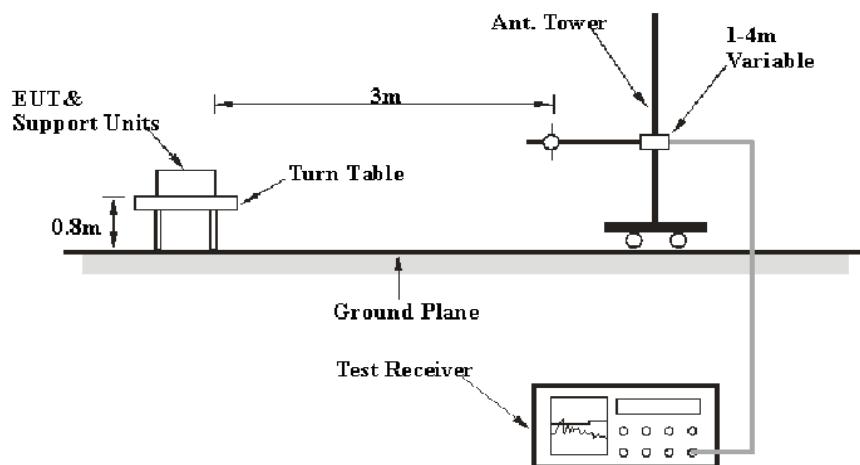
Above 1GHz:
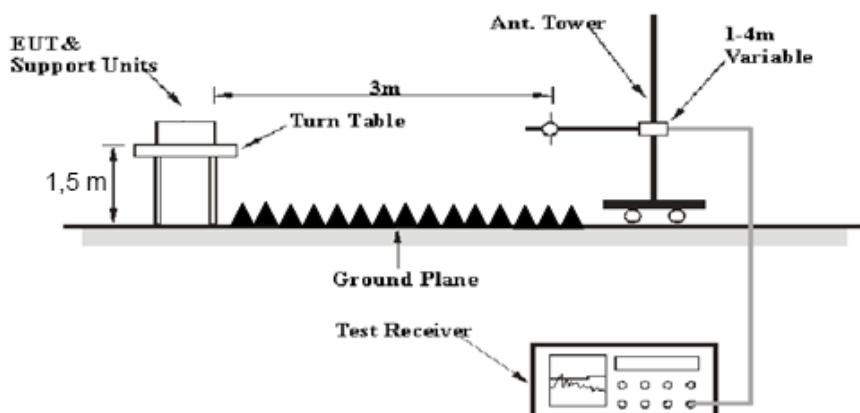
The radiated emission Below 1GHz tests were performed in the 3 meters chamber test site, above 1GHz tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, and FCC 15.247 limits.

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 25 GHz.

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

Frequency Range	RBW	Video B/W	IF B/W	Measurement
30 MHz – 1000 MHz	120 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1MHz	3 MHz	/	PK
	1MHz	10 Hz	/	AV

Test Procedure

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 - 1 GHz, peak and average detection modes for frequencies above 1 GHz.

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	2018-09-01
Sunol Sciences	Antenna	JB3	A060611-1	2014-11-06	2017-11-05
HP	Amplifier	8447E	2434A02181	2017-09-01	2018-09-01
R&S	Spectrum Analyzer	E4440A	SG43360054	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
MITEQ	Amplifier	AFS42-00101800-25-S-42	2001271	2017-09-05	2018-09-05
Quinstar	Amplifier	QLW-18405536-JO	15964001001	2017-06-27	2018-06-27
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).

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 = Limit – Corrected Amplitude

Test Data

Environmental Conditions

Temperature:	25.2~25.9 °C
Relative Humidity:	29 ~28%
ATM Pressure:	100.8~101.7 kPa

* The testing was performed by Blake Yang on 2017-10-19&2017-10-30.

Test Mode: Transmitting

1) 30MHz-1GHz(GFSK Low channel was the worst)

Horizontal:
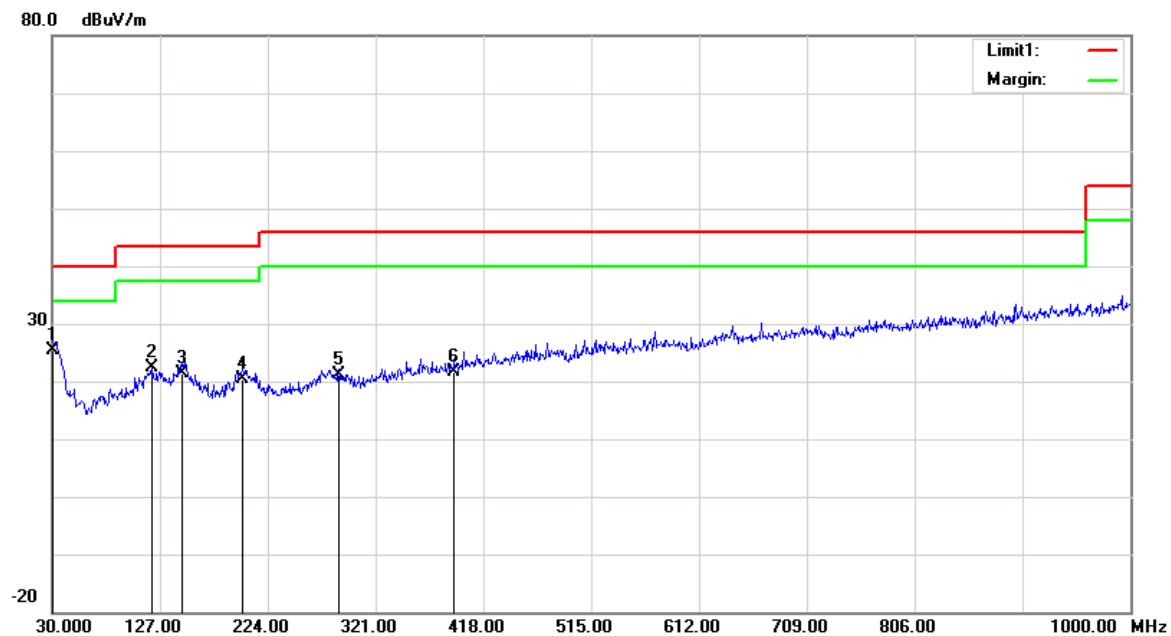
Frequency (MHz)	Receiver Reading (dBμV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
30.0000	24.22	QP	1.08	25.30	40.00	14.70
120.2100	27.24	QP	-4.94	22.30	43.50	21.20
146.4000	27.86	QP	-6.46	21.40	43.50	22.10
200.7200	26.51	QP	-6.21	20.30	43.50	23.20
288.0200	25.02	QP	-3.92	21.10	46.00	24.90
391.8100	24.05	QP	-2.45	21.60	46.00	24.40

Vertical:
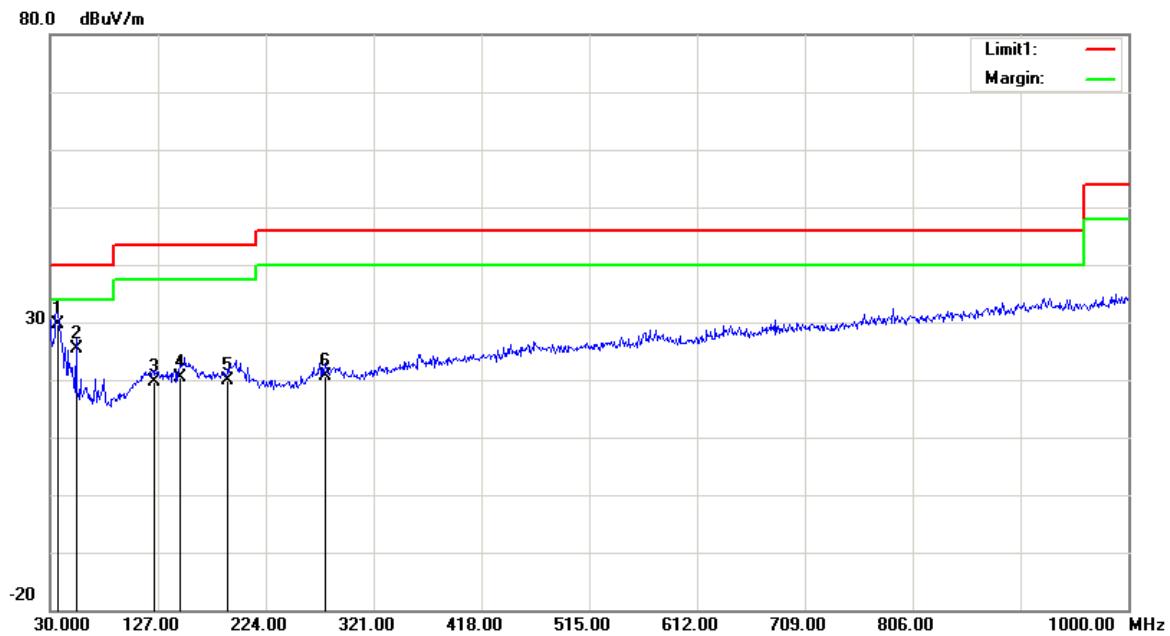
Frequency (MHz)	Receiver Reading (dBμV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
36.7900	33.43	QP	-3.83	29.60	40.00	10.40
53.2800	37.57	QP	-12.27	25.30	40.00	14.70
124.0900	24.49	QP	-4.79	19.70	43.50	23.80
147.3700	26.89	QP	-6.49	20.40	43.50	23.10
190.0500	27.50	QP	-7.70	19.80	43.50	23.70
277.3500	24.32	QP	-3.72	20.60	46.00	25.40

2) 1GHz-25GHz:

BDR Mode (GFSK):

Low Channel, Horizontal:
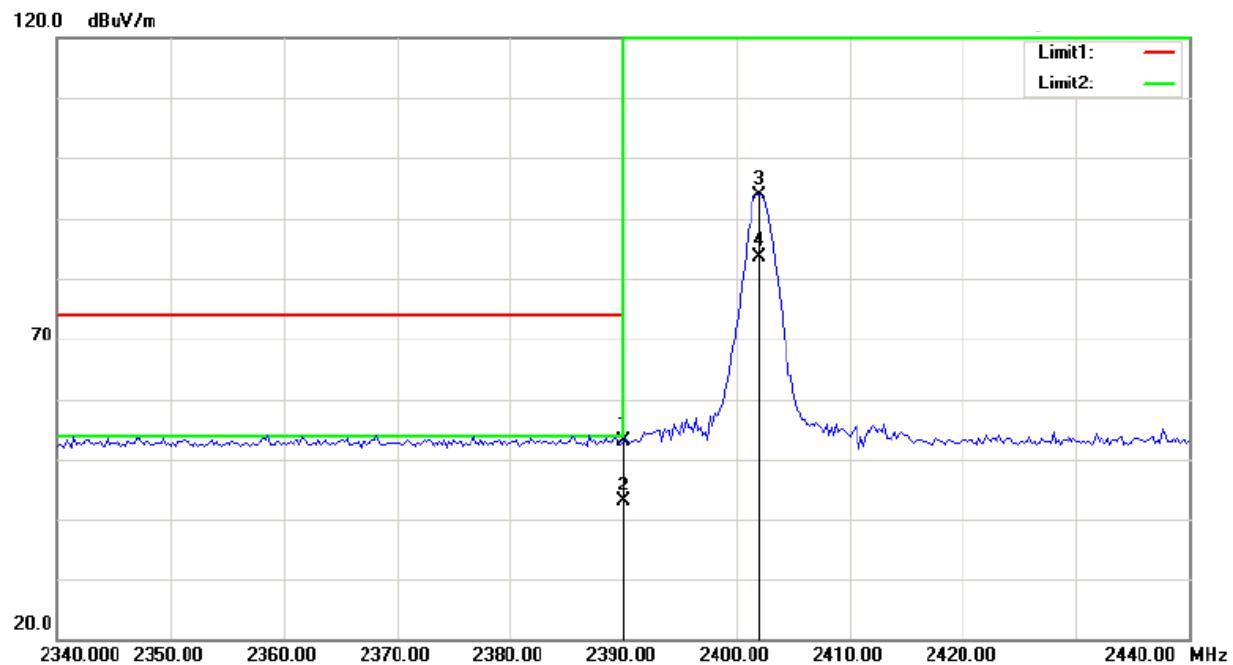
Mk.	No.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	2390.000	22.58	peak	30.48	53.06	74.00	164	254	20.94	
*	2	2390.000	12.62	AVG	30.48	43.10	54.00	164	254	10.90	
	3	2402.000	63.45	peak	30.50	93.95	125.20	164	254	31.25	Fundamental
	4	2402.000	53.17	AVG	30.50	83.67	125.20	164	254	41.53	Fundamental
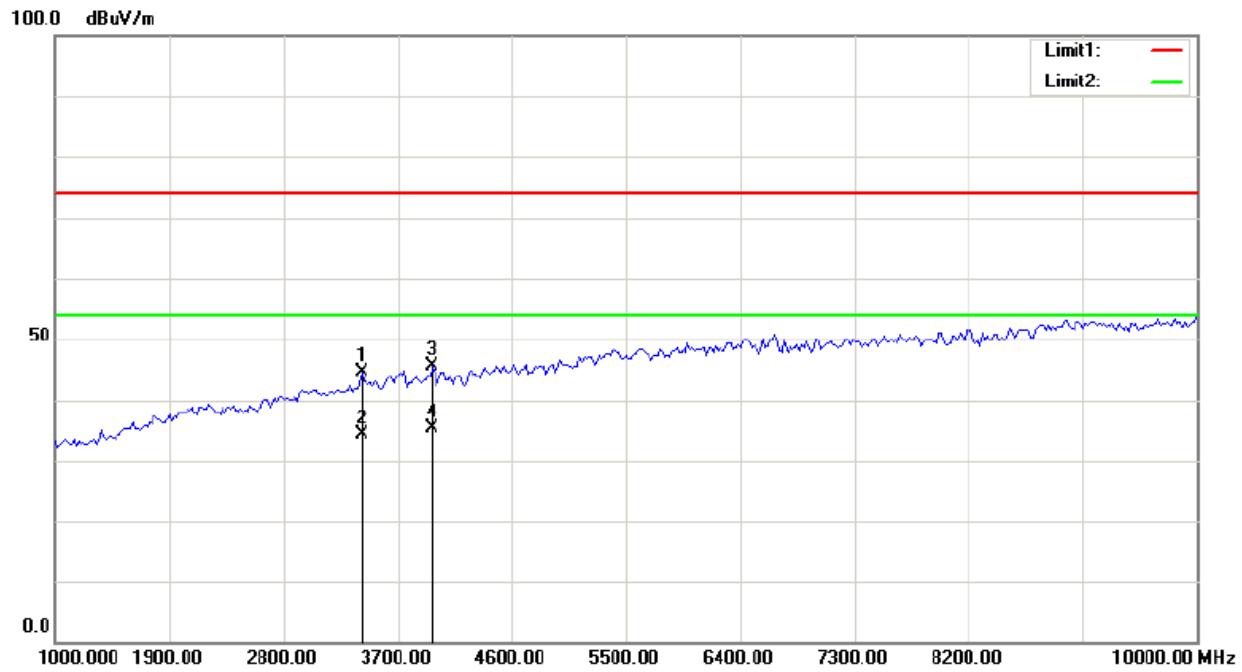
100.0　dBuV/m

Mk.	No.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	3412.000	37.65	peak	6.94	44.59	74.00	164	244	29.41	
	2	3412.000	27.34	AVG	6.94	34.28	54.00	164	244	19.72	
	3	3970.000	36.89	peak	8.63	45.52	74.00	164	244	28.48	
*	4	3970.000	26.63	AVG	8.63	35.26	54.00	164	244	18.74	
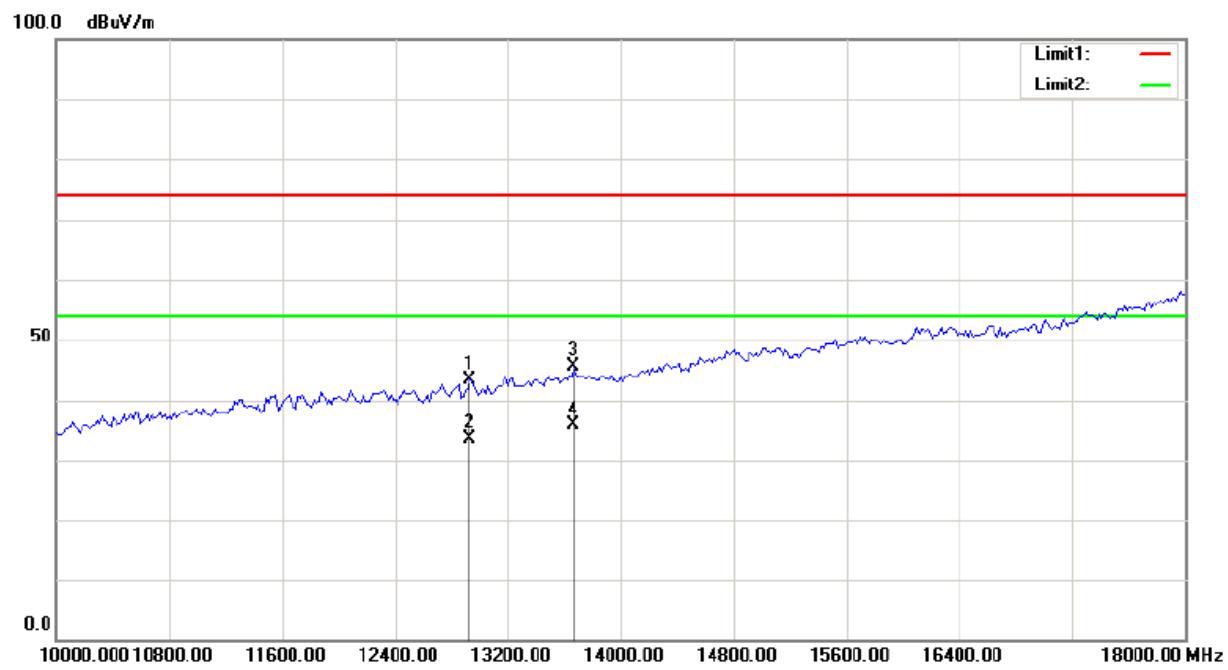
Mk.	No.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	12928.000	16.63	peak	26.77	43.40	74.00	157	241	30.60	
	2	12928.000	6.91	AVG	26.77	33.68	54.00	157	241	20.32	
	3	13664.000	17.47	peak	28.24	45.71	74.00	157	241	28.29	
*	4	13664.000	7.72	AVG	28.24	35.96	54.00	157	241	18.04	
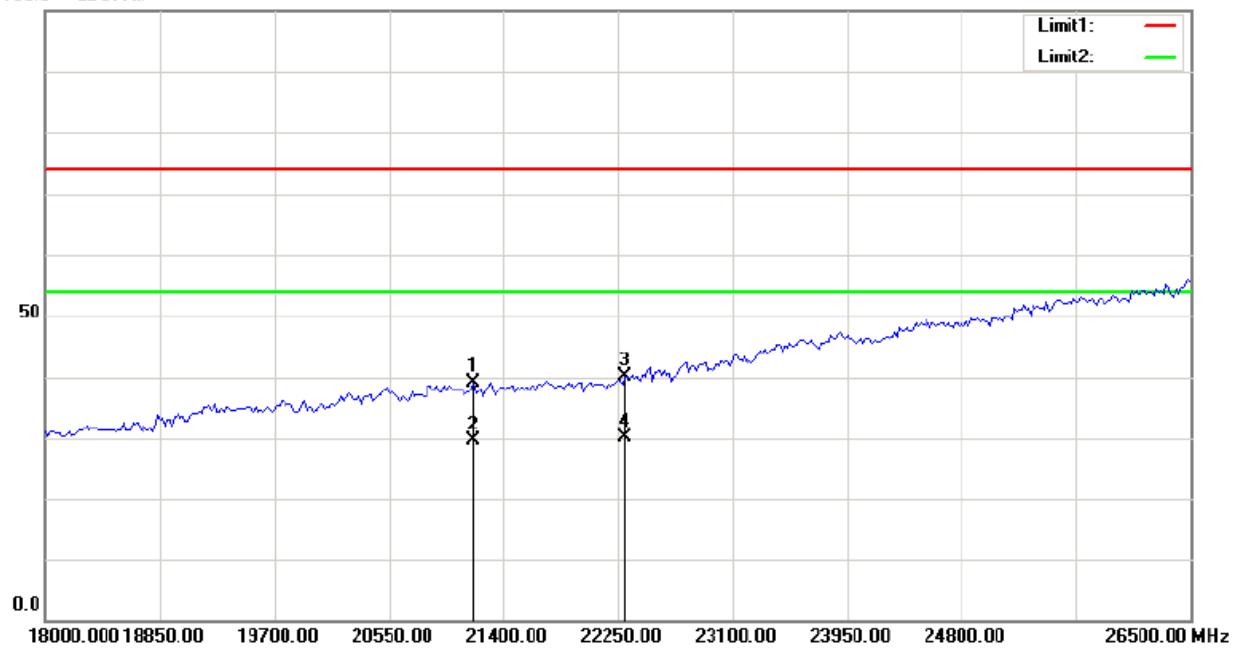
Mk.	No.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	21179.000	21.71	peak	17.34	39.05	74.00	137	324	34.95	
	2	21179.000	12.33	AVG	17.34	29.67	54.00	137	324	24.33	
	3	22301.000	21.29	peak	18.94	40.23	74.00	137	324	33.77	
*	4	22301.000	11.21	AVG	18.94	30.15	54.00	137	324	23.85	

Vertical:
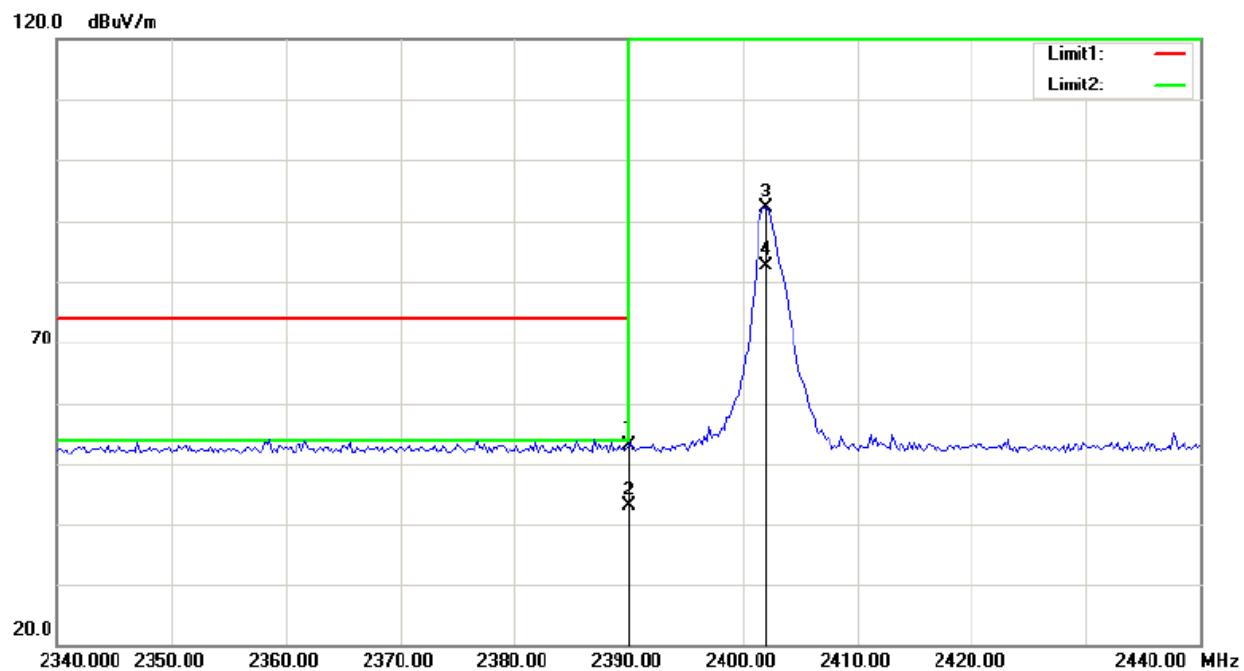
Mk.	No.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	2390.000	22.58	peak	30.48	53.06	74.00	158	344	20.94	
*	2	2390.000	12.62	AVG	30.48	43.10	54.00	158	344	10.90	
	3	2402.000	61.75	peak	30.50	92.25	125.20	158	344	32.95	Fundamental
	4	2402.000	52.14	AVG	30.50	82.64	125.20	158	344	42.56	Fundamental
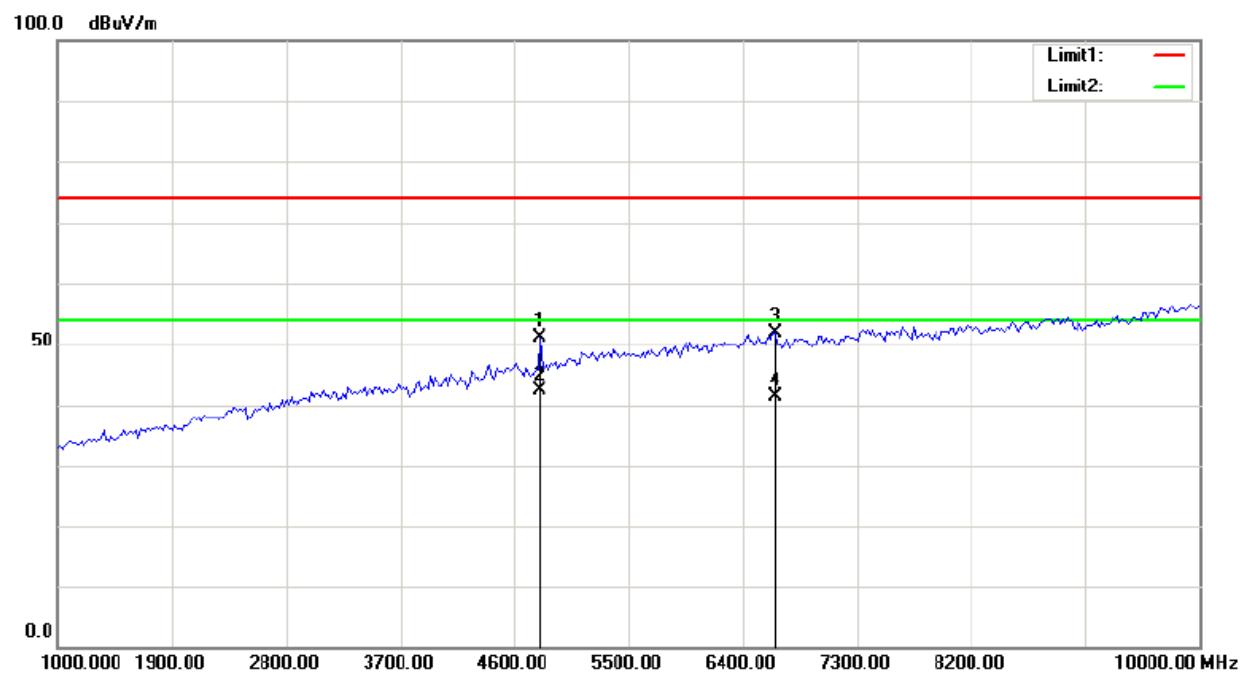
Mk.	No.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	4798.000	40.78	peak	10.31	51.09	74.00	183	245	22.91	
*	2	4798.000	32.04	AVG	10.31	42.35	54.00	183	245	11.65	
	3	6652.000	36.07	peak	15.87	51.94	74.00	183	245	22.06	
	4	6652.000	25.41	AVG	15.87	41.28	54.00	183	245	12.72	
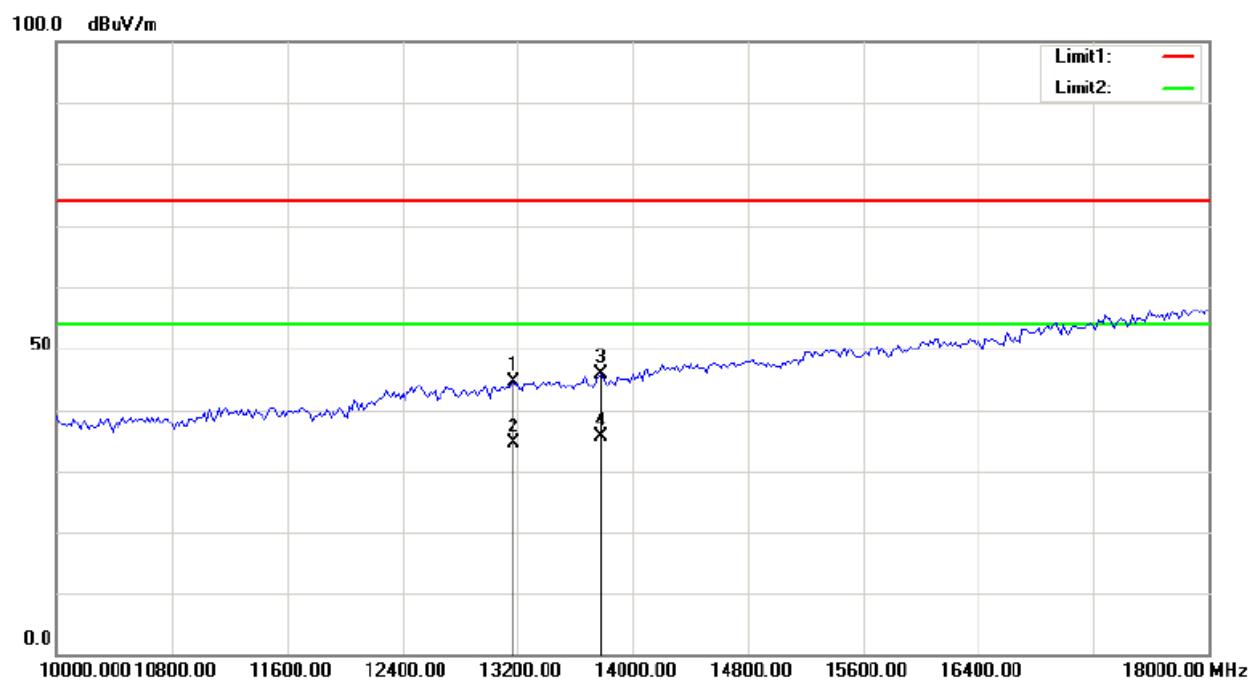
| Mk.	No.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	13168.000	17.29	peak	27.22	44.51	74.00	175	241	29.49	
	2	13168.000	7.44	AVG	27.22	34.66	54.00	175	241	19.34	
	3	13776.000	17.89	peak	27.90	45.79	74.00	175	241	28.21	
*	4	13776.000	7.82	AVG	27.90	35.72	54.00	175	241	18.28	
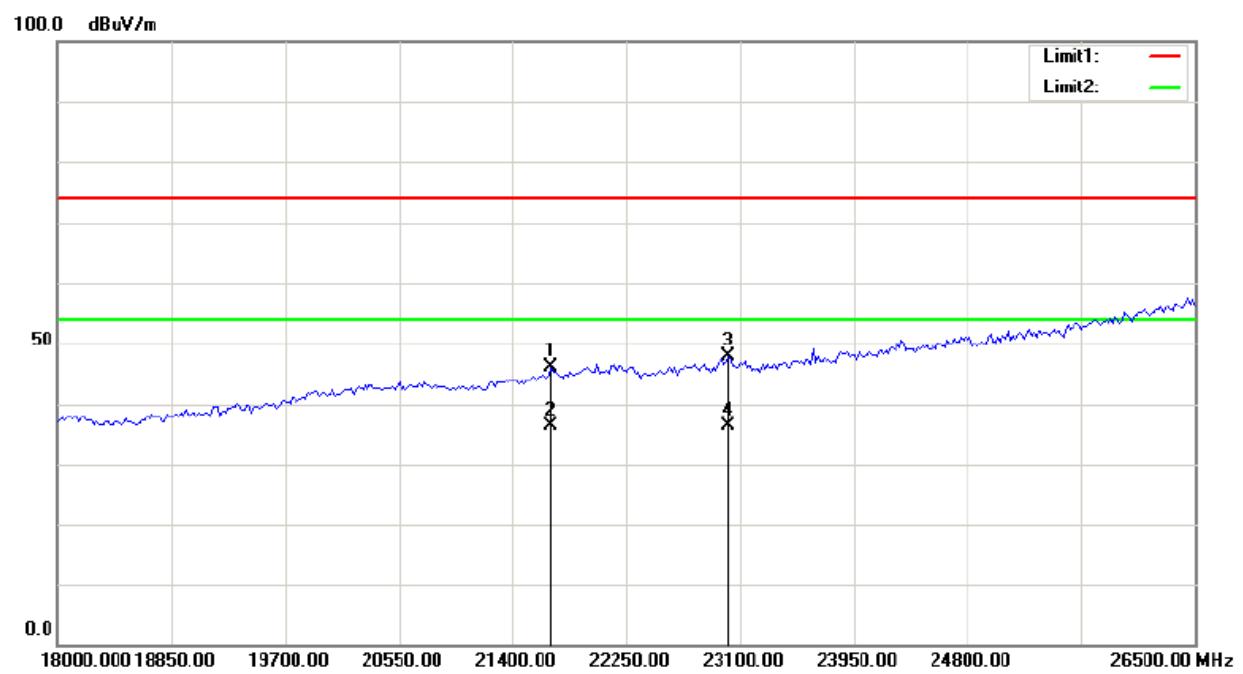
Mk.	No.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	21689.000	27.30	peak	18.71	46.01	74.00	172	256	27.99	
	2	21689.000	17.57	AVG	18.71	36.28	54.00	172	256	17.72	
	3	23015.000	28.86	peak	18.92	47.78	74.00	172	256	26.22	
*	4	23015.000	17.53	AVG	18.92	36.45	54.00	172	256	17.55	

Middle Channel

Horizontal
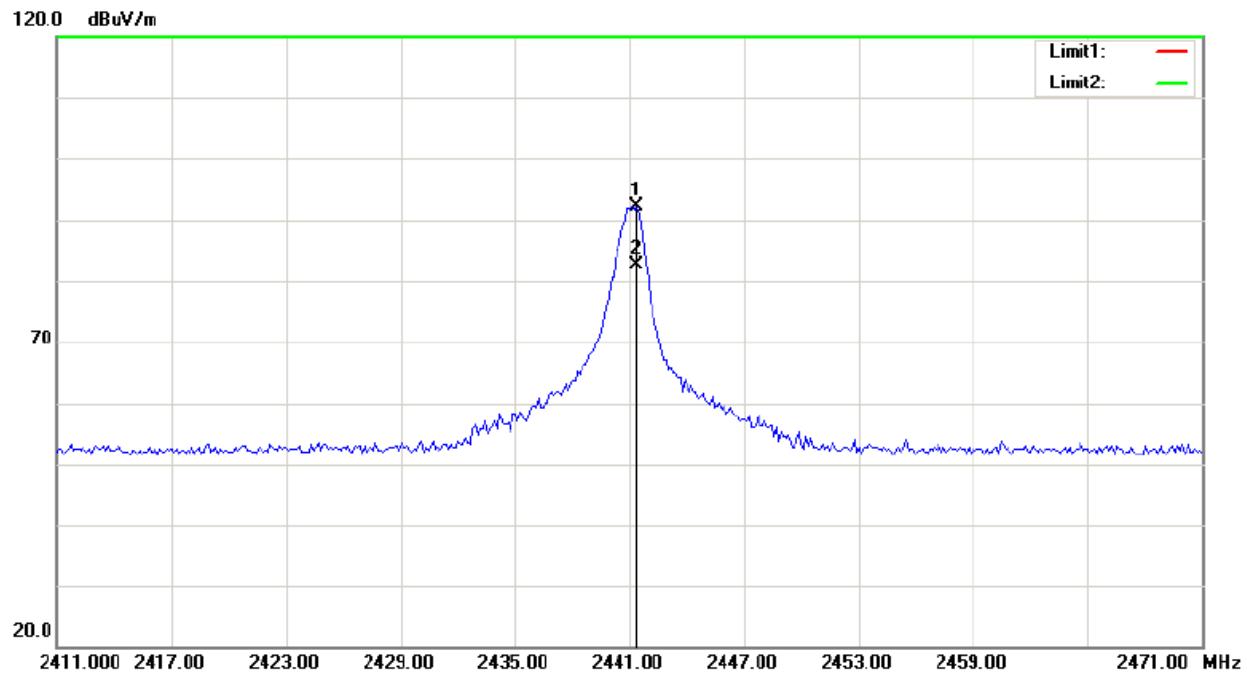
| Mk.	No.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	1	2441.360	61.64	peak	30.58	92.22	125.20	173	242	32.98	Fundamental
	2	2441.360	52.09	AVG	30.58	82.67	125.20	173	242	42.53	Fundamental
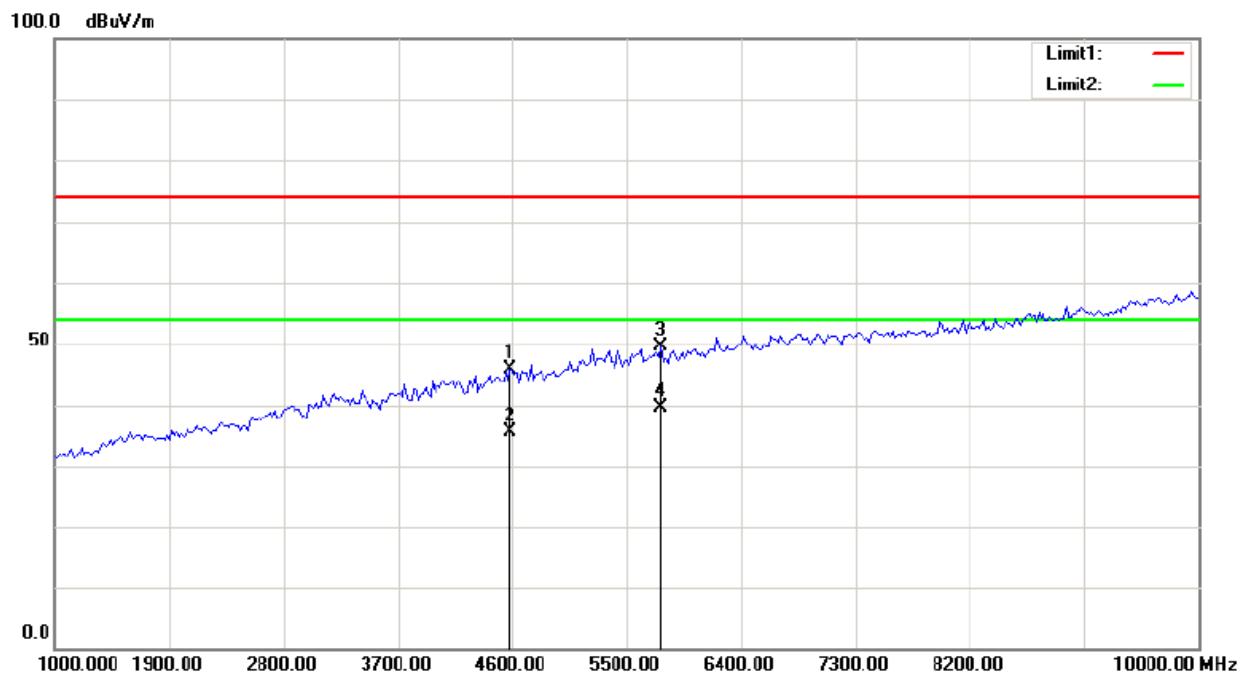
Mk.	No.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	4582.000	36.24	peak	9.64	45.88	74.00	145	264	28.12	
	2	4582.000	26.00	AVG	9.64	35.64	54.00	145	264	18.36	
	3	5770.000	35.94	peak	13.78	49.72	74.00	145	264	24.28	
*	4	5770.000	25.73	AVG	13.78	39.51	54.00	145	264	14.49	

Note: No emission was detected in the range 10-25GHz.
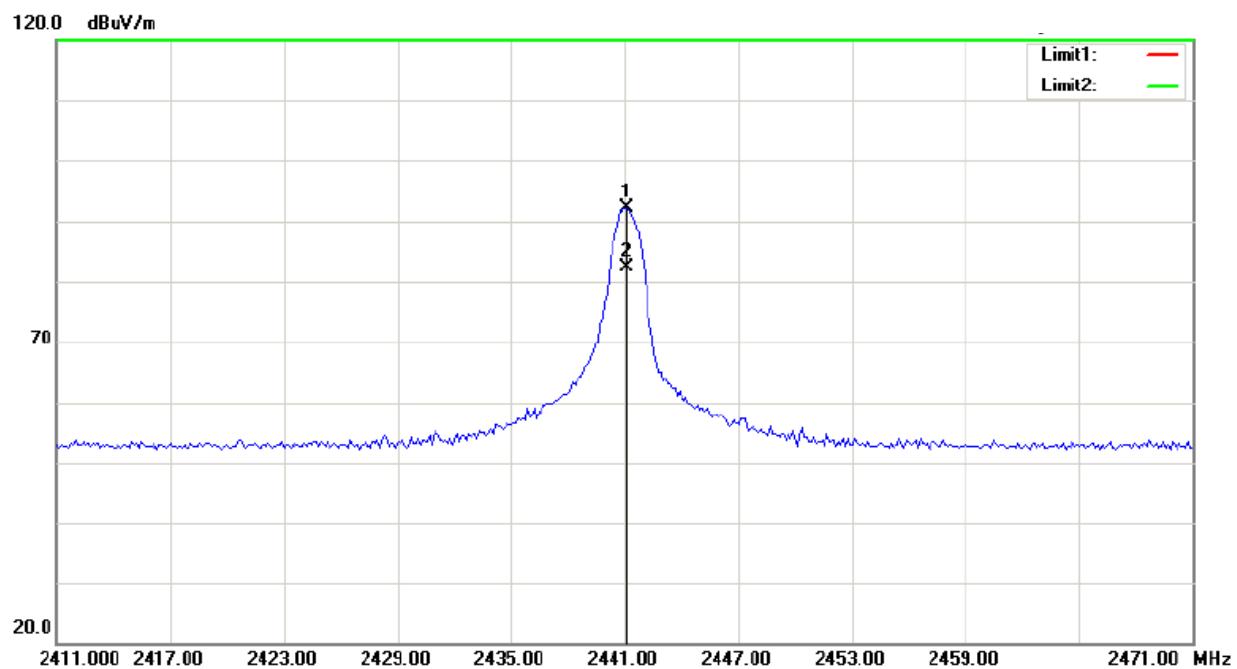
Vertical

| Mk.	No.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	1	2441.120	61.58	peak	30.58	92.16	125.20	143	288	33.04	Fundamental
	2	2441.120	51.70	AVG	30.58	82.28	125.20	143	288	42.92	Fundamental
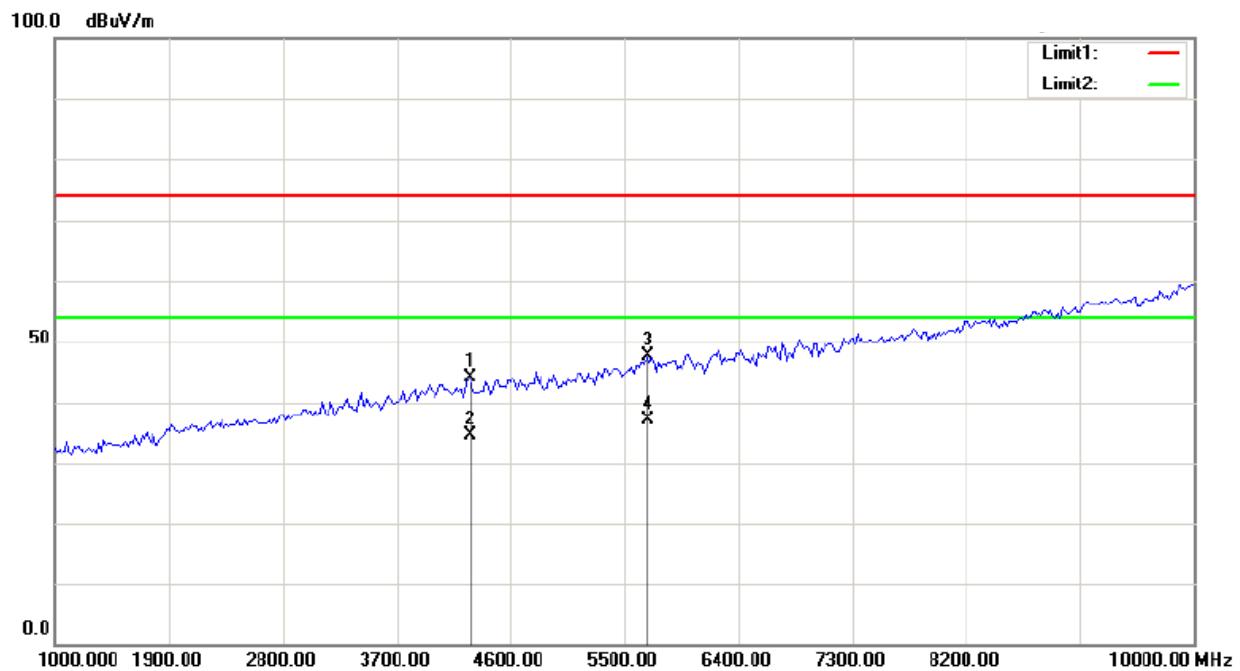
Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	4276.000	35.19	peak	8.87	44.06	74.00	157	122	29.94	
	2	4276.000	25.78	AVG	8.87	34.65	54.00	157	122	19.35	
	3	5680.000	34.06	peak	13.59	47.65	74.00	157	122	26.35	
*	4	5680.000	23.66	AVG	13.59	37.25	54.00	157	122	16.75	

Note: No emission was detected in the range 10-25GHz.
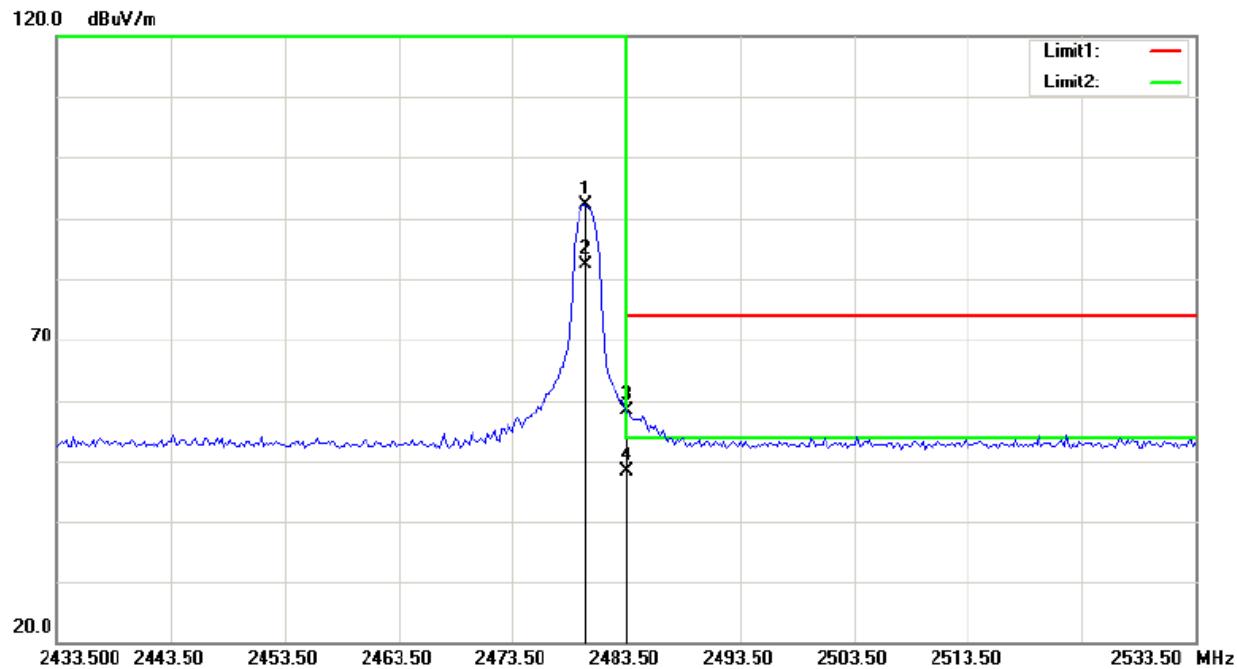
High Channel

Horizontal

| Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	2479.900	61.50	peak	30.66	92.16	125.20	166	235	33.04	Fundamental
	2	2479.900	51.79	AVG	30.66	82.45	125.20	166	235	42.75	Fundamental
	3	2483.500	27.83	peak	30.67	58.50	74.00	166	235	15.50	
*	4	2483.500	17.83	AVG	30.67	48.50	54.00	166	235	5.50	

100.0   dBuV/m
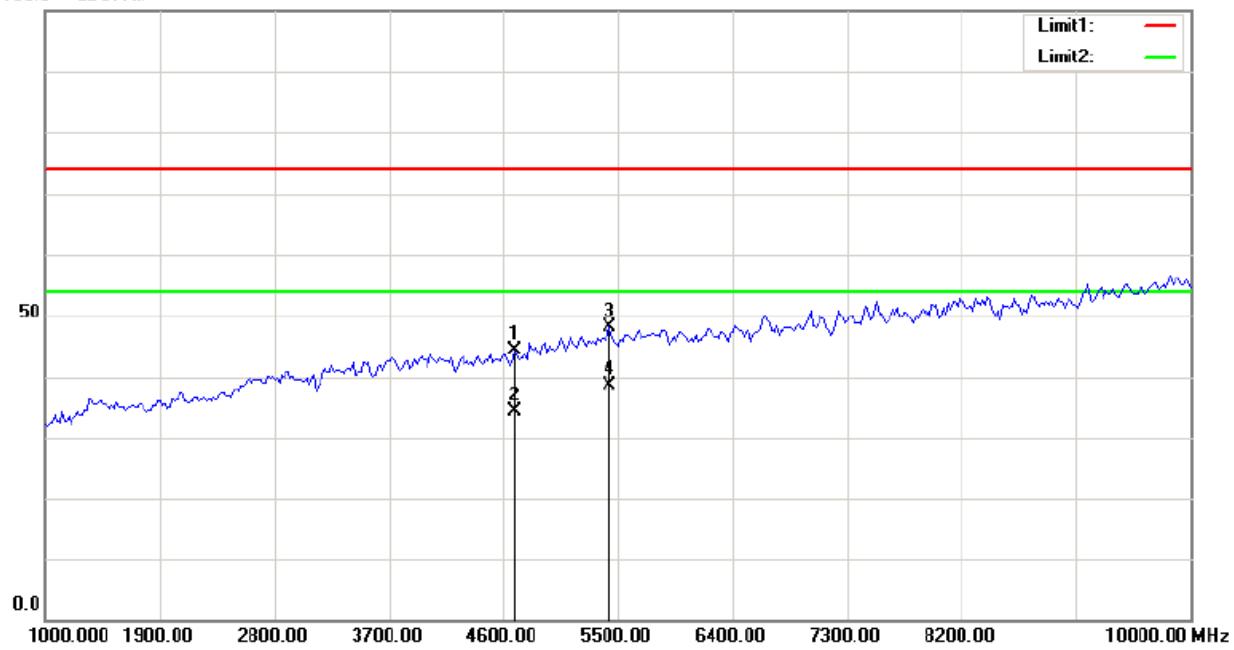
Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	4690.000	34.46	peak	9.81	44.27	74.00	164	242	29.73	
	2	4690.000	24.48	AVG	9.81	34.29	54.00	164	242	19.71	
	3	5428.000	35.39	peak	12.67	48.06	74.00	164	242	25.94	
*	4	5428.000	25.95	AVG	12.67	38.62	54.00	164	242	15.38	

Note: No emission was detected in the range 10-25GHz.
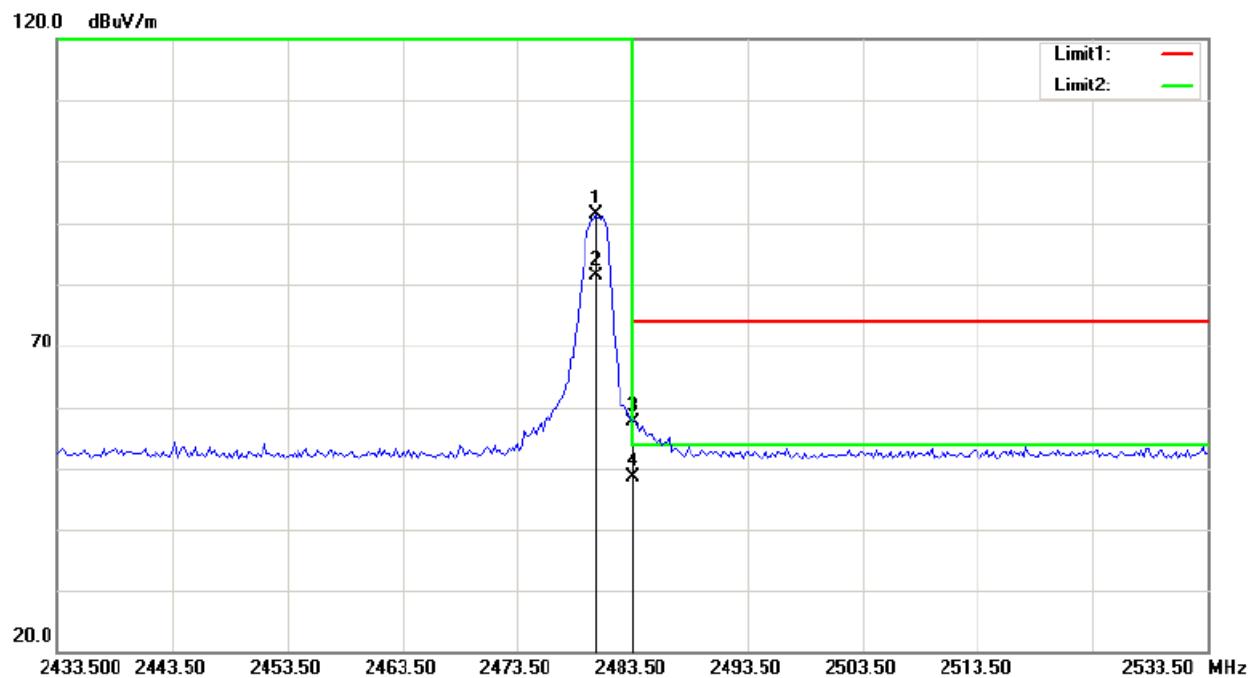
Vertical

| Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	2480.300	60.63	peak	30.66	91.29	125.20	153	342	33.91	Fundamental
	2	2480.300	50.81	AVG	30.66	81.47	125.20	153	342	43.73	Fundamental
	3	2483.500	27.08	peak	30.67	57.75	74.00	153	342	16.25	
*	4	2483.500	17.91	AVG	30.67	48.58	54.00	153	342	5.42	
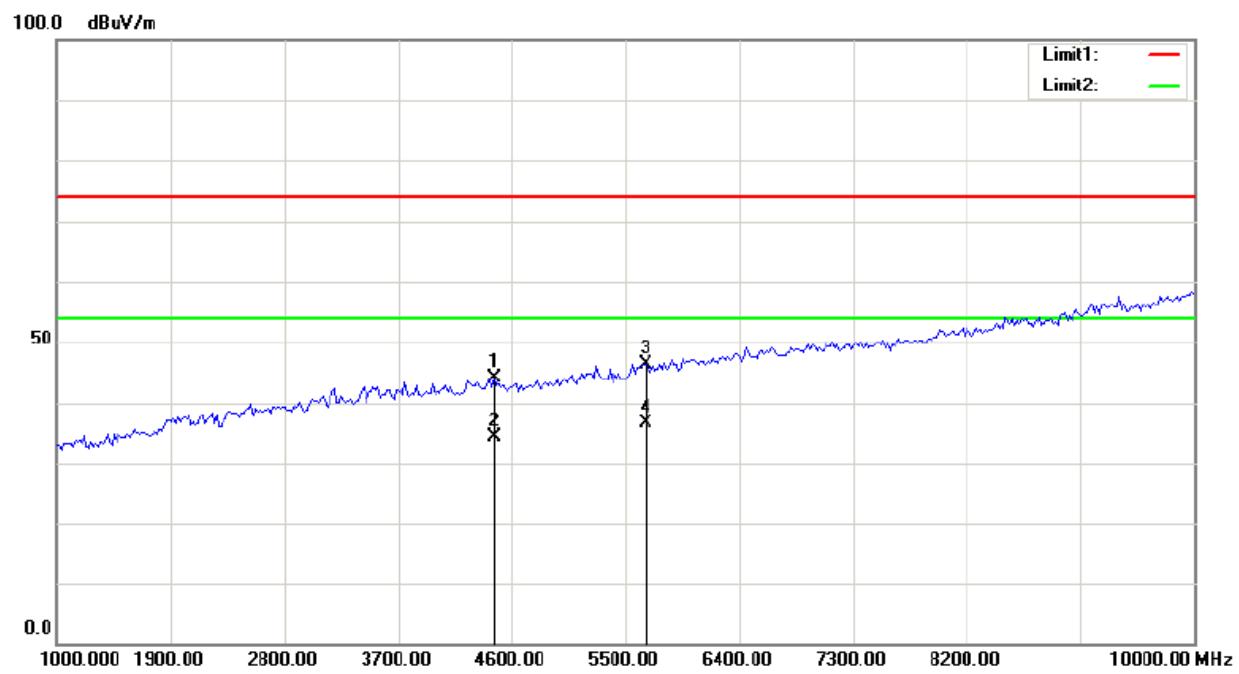
Mk.	No.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	4456.000	35.01	peak	9.22	44.23	74.00	142	235	29.77	
	2	4456.000	25.13	AVG	9.22	34.35	54.00	142	235	19.65	
	3	5662.000	32.94	peak	13.55	46.49	74.00	142	235	27.51	
*	4	5662.000	23.20	AVG	13.55	36.75	54.00	142	235	17.25	

Note: No emission was detected in the range 10-25GHz.

*EDR Mode (π/4-DQPSK):*

Low Channel, Horizontal
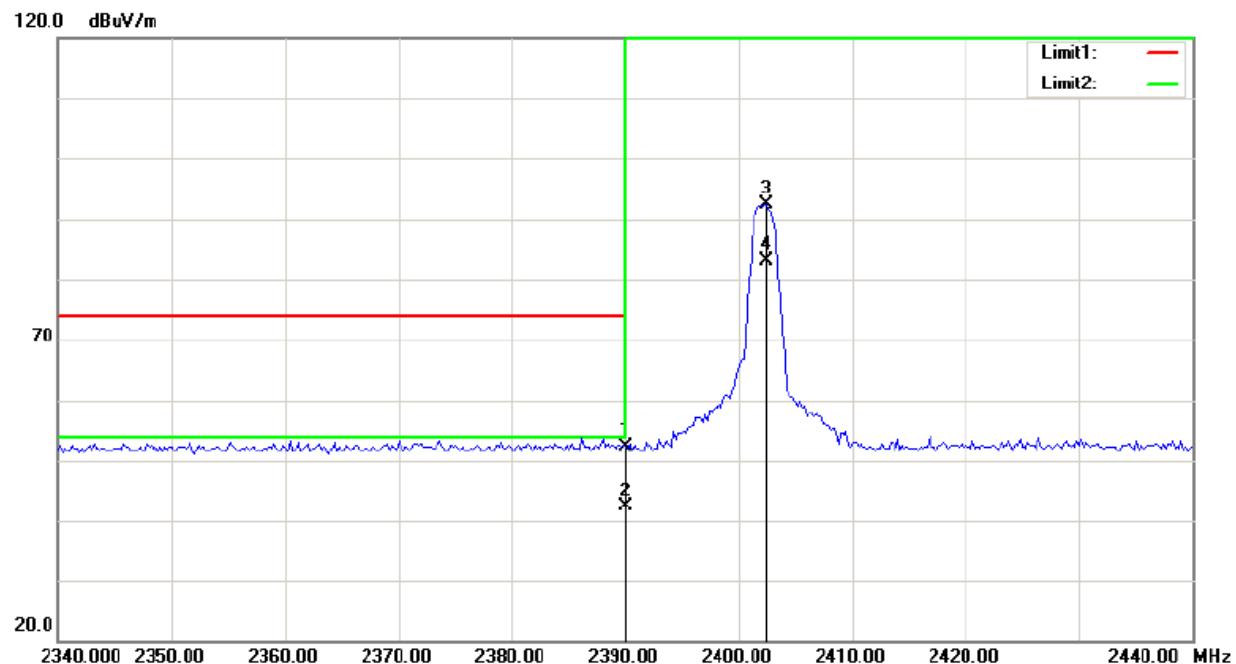
| Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	2390.000	21.95	peak	30.48	52.43	74.00	153	265	21.57	
*	2	2390.000	11.92	AVG	30.48	42.40	54.00	153	265	11.60	
	3	2402.400	61.79	peak	30.50	92.29	125.20	153	265	32.91	Fundamental
	4	2402.400	52.68	AVG	30.50	83.18	125.20	153	265	42.02	Fundamental
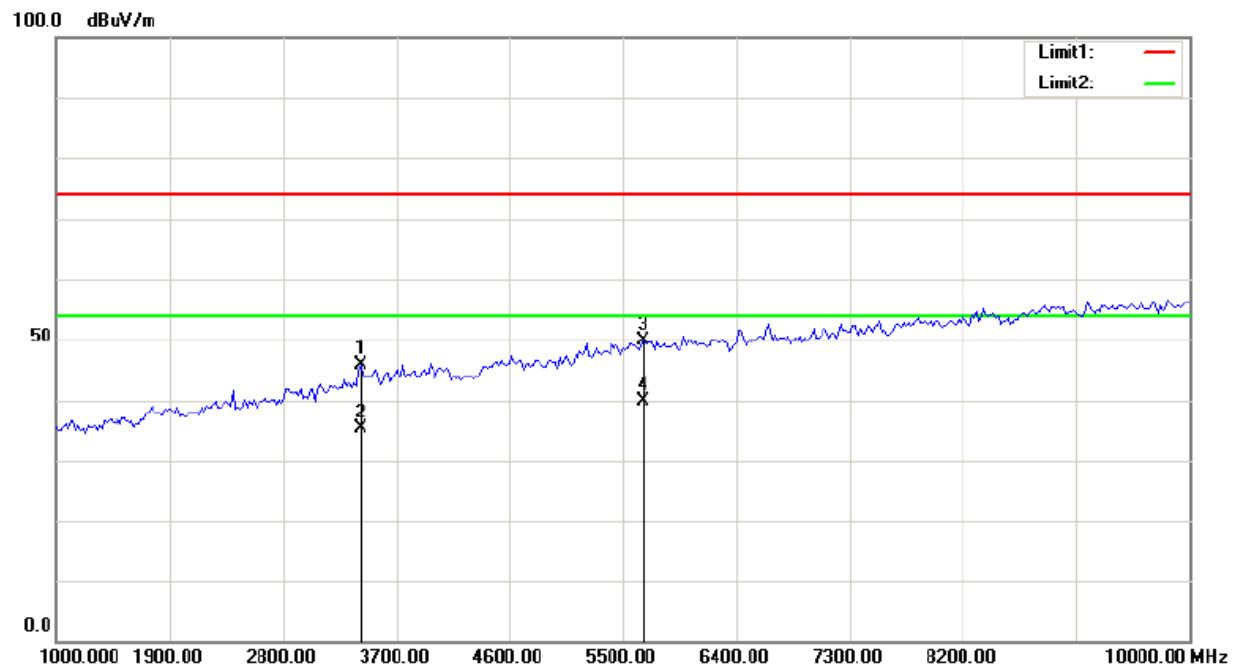
| Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	3412.000	38.91	peak	6.94	45.85	74.00	167	247	28.15	
	2	3412.000	28.39	AVG	6.94	35.33	54.00	167	247	18.67	
	3	5662.000	36.43	peak	13.55	49.98	74.00	167	247	24.02	
*	4	5662.000	26.30	AVG	13.55	39.85	54.00	167	247	14.15	

Note: No emission was detected in the range 10-25GHz.
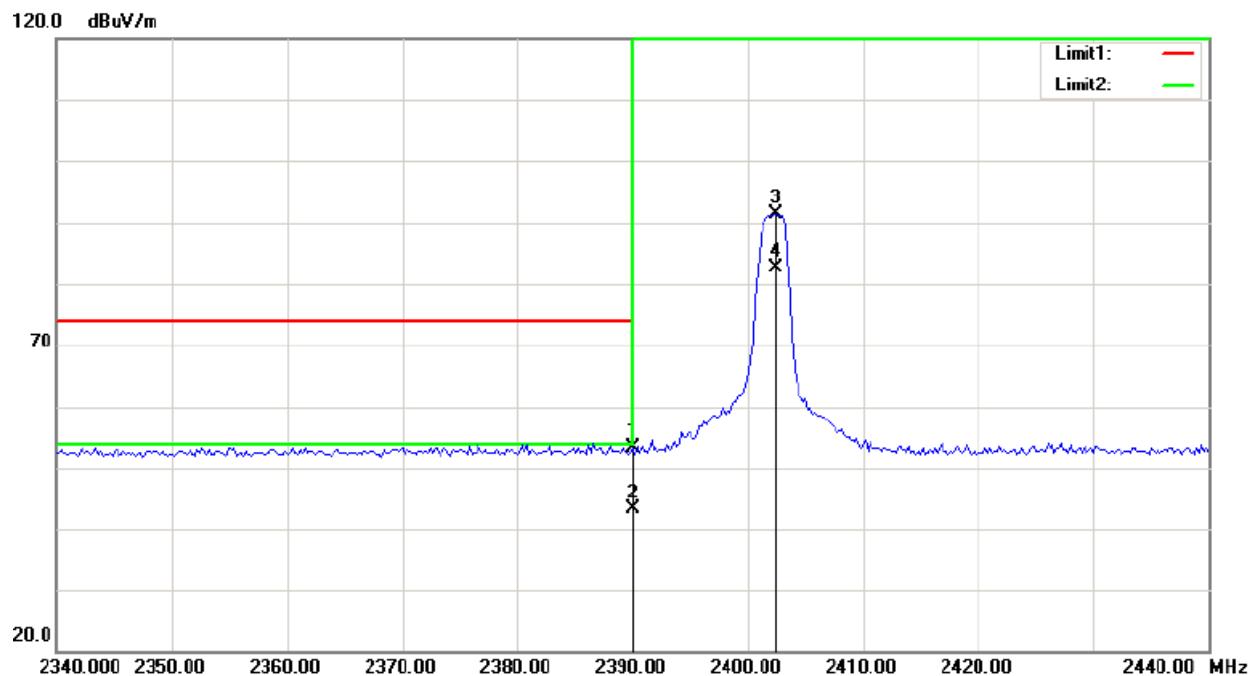
Vertical

| Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	2390.000	22.90	peak	30.48	53.38	74.00	154	286	20.62	
*	2	2390.000	12.92	AVG	30.48	43.40	54.00	154	286	10.60	
	3	2402.400	60.79	peak	30.50	91.29	125.20	154	286	33.91	Fundamental
	4	2402.400	52.15	AVG	30.50	82.65	125.20	154	286	42.55	Fundamental
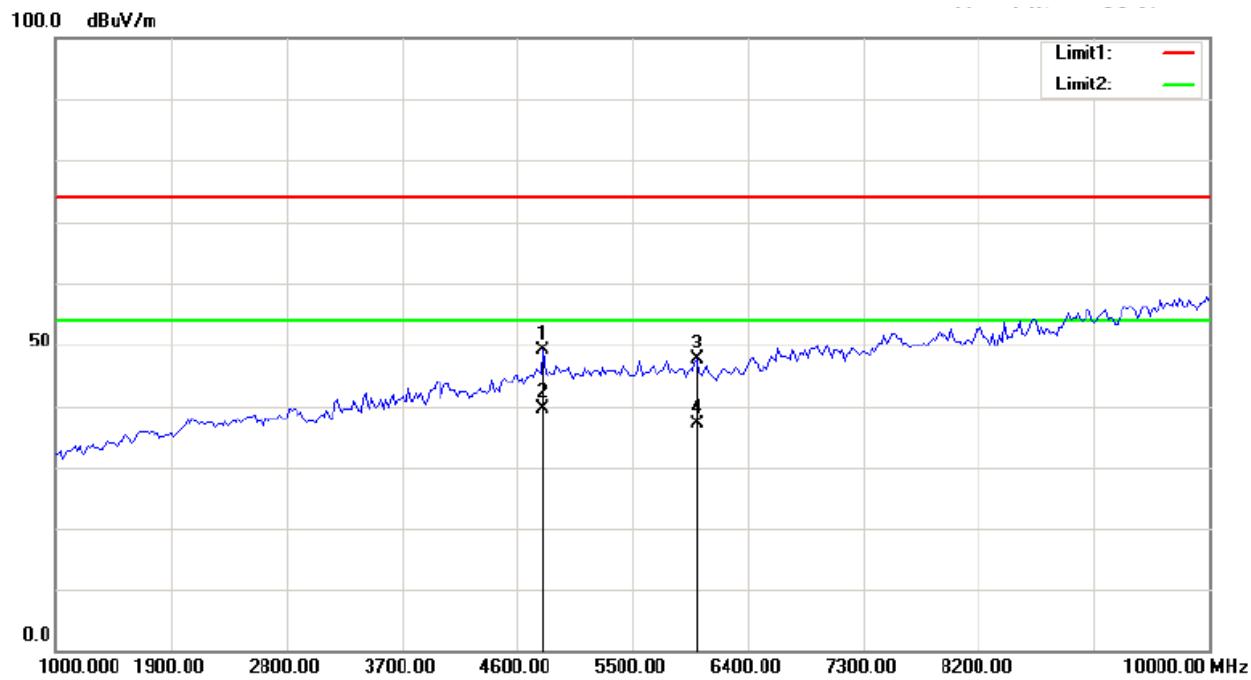
Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	4798.000	38.87	peak	10.31	49.18	74.00	134	263	24.82	
*	2	4798.000	29.44	AVG	10.31	39.75	54.00	134	263	14.25	
	3	6004.000	32.98	peak	14.60	47.58	74.00	134	263	26.42	
	4	6004.000	22.65	AVG	14.60	37.25	54.00	134	263	16.75	

Note: No emission was detected in the range 10-25GHz.
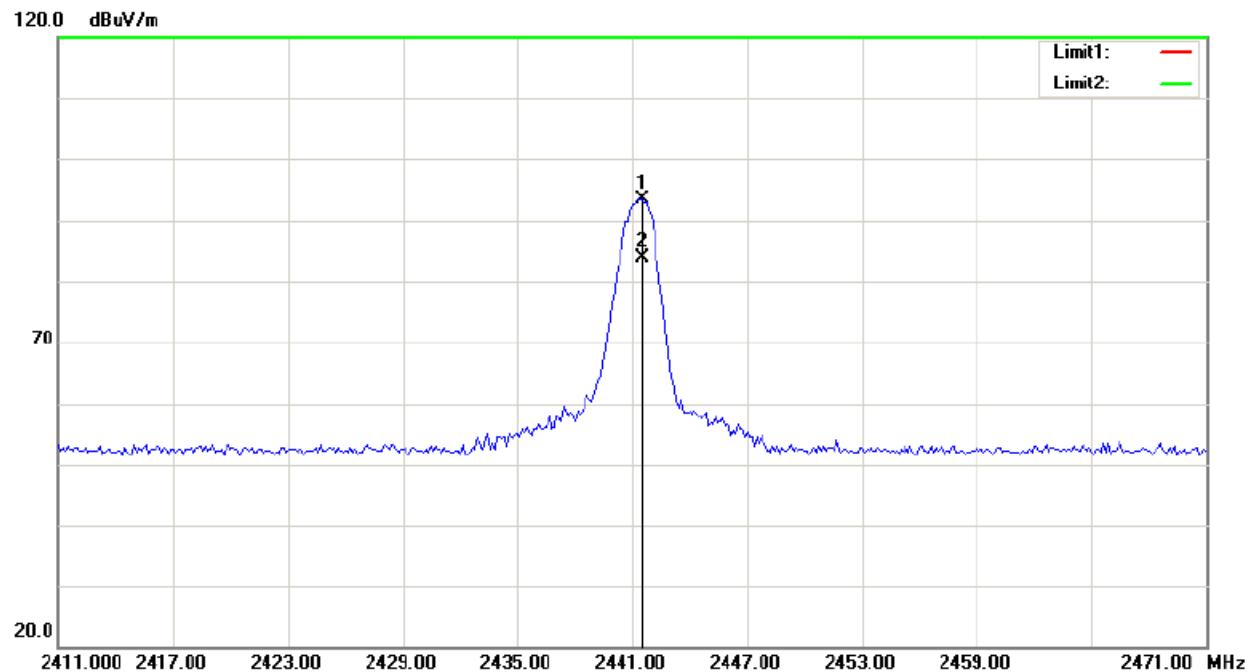
Middle Channel

Horizontal

Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	1	2441.480	62.77	peak	30.58	93.35	125.20	163	322	31.85	Fundamental
	2	2441.480	53.23	AVG	30.58	83.81	125.20	163	322	41.39	Fundamental
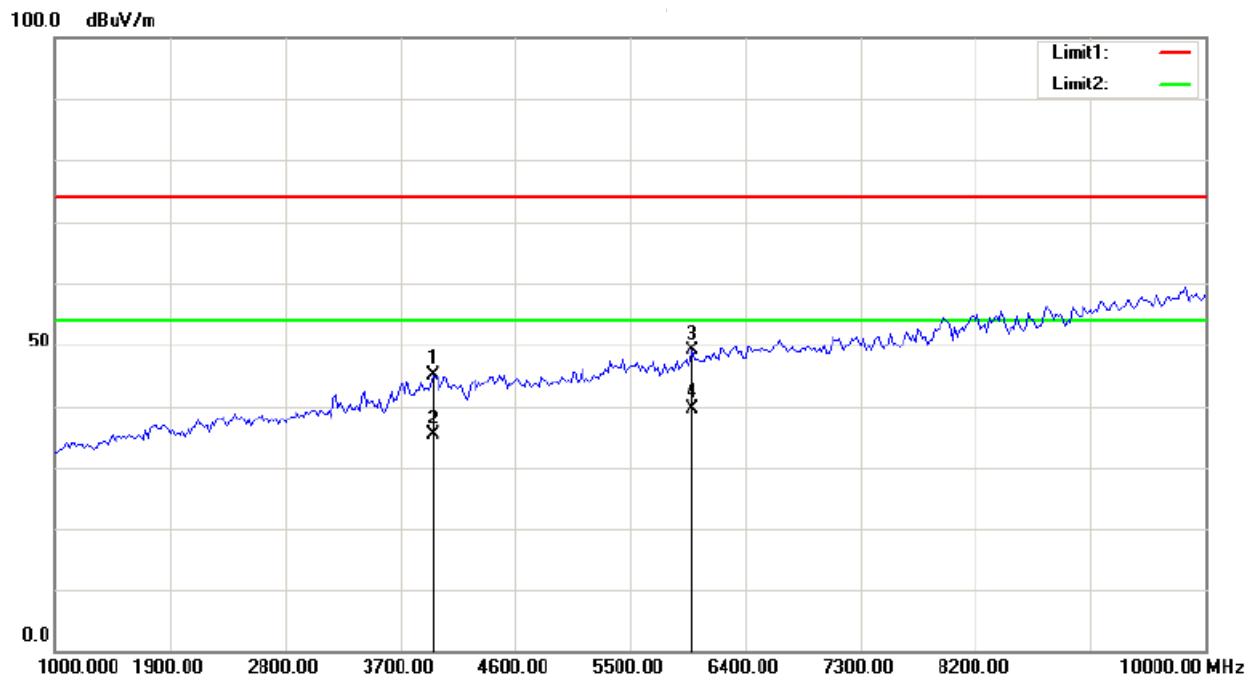
100.0 dBuV/m

Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	3952.000	36.51	peak	8.54	45.05	74.00	133	322	28.95	
	2	3952.000	26.75	AVG	8.54	35.29	54.00	133	322	18.71	
	3	5986.000	34.50	peak	14.53	49.03	74.00	133	322	24.97	
*	4	5986.000	25.04	AVG	14.53	39.57	54.00	133	322	14.43	

Note: No emission was detected in the range 10-25GHz.
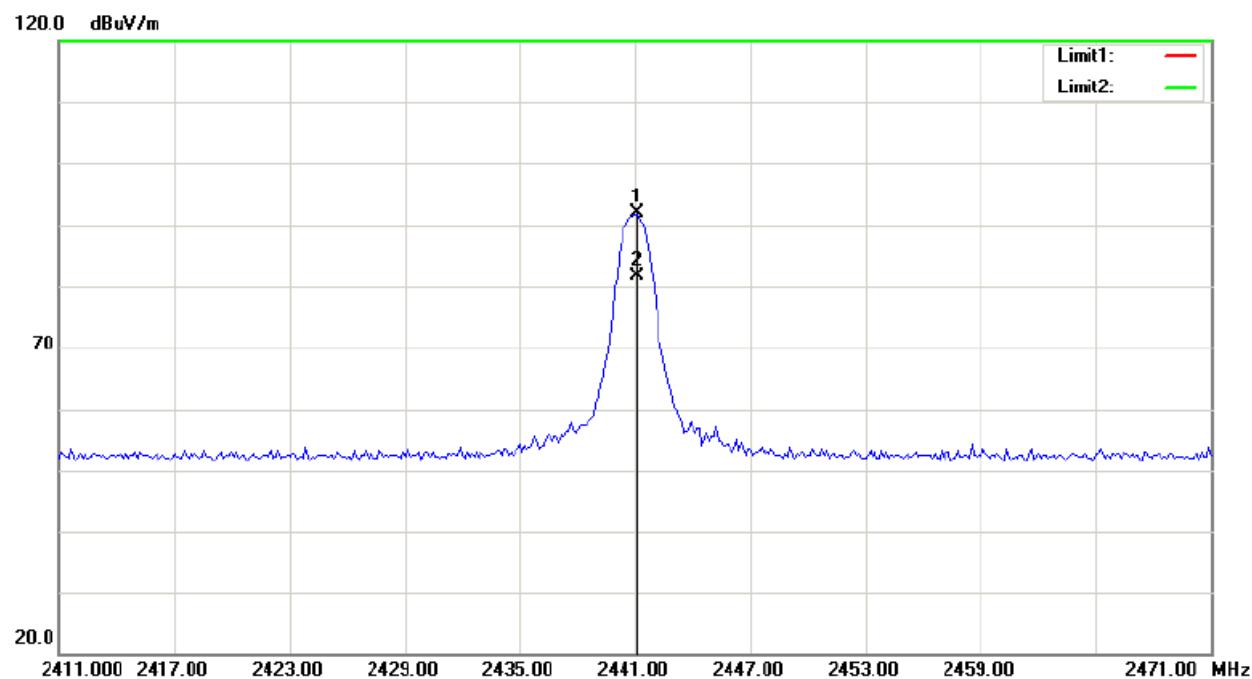
Vertical

| Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	1	2441.120	61.21	peak	30.58	91.79	125.20	143	275	33.41	Fundamental
	2	2441.120	50.98	AVG	30.58	81.56	125.20	143	275	43.64	Fundamental
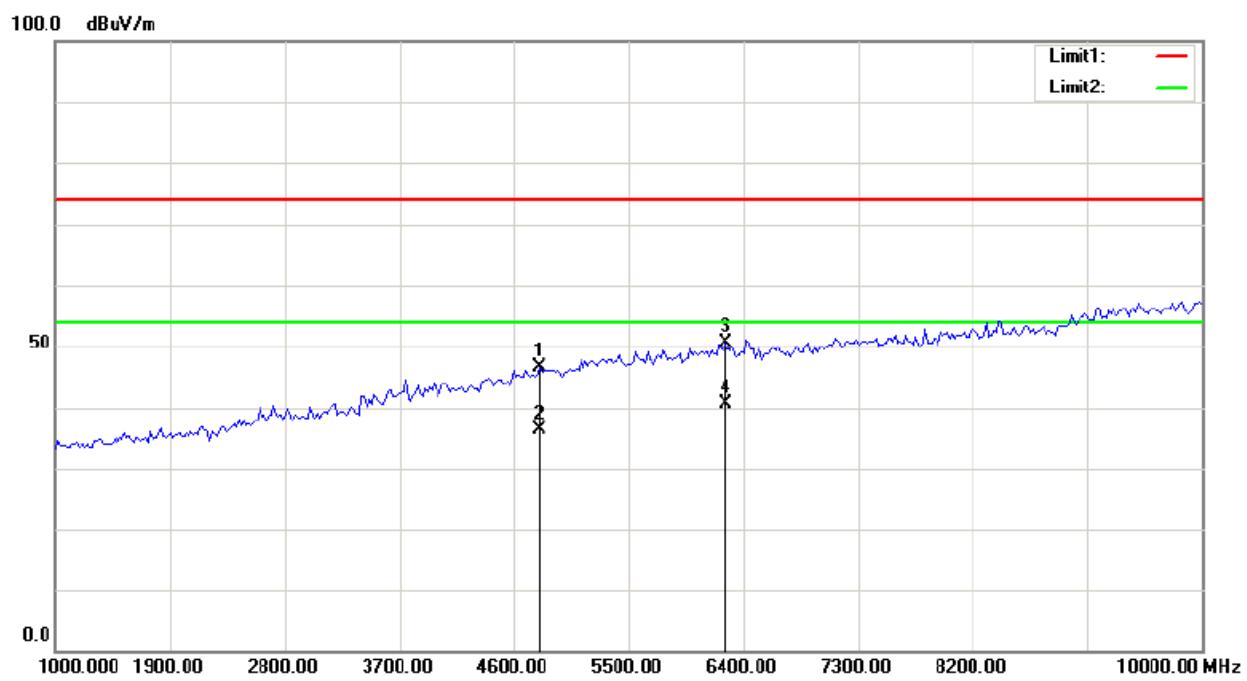
Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	4798.000	36.42	peak	10.31	46.73	74.00	164	287	27.27	
	2	4798.000	26.14	AVG	10.31	36.45	54.00	164	287	17.55	
	3	6256.000	35.45	peak	15.12	50.57	74.00	164	287	23.43	
*	4	6256.000	25.55	AVG	15.12	40.67	54.00	164	287	13.33	

Note: No emission was detected in the range 10-25GHz.
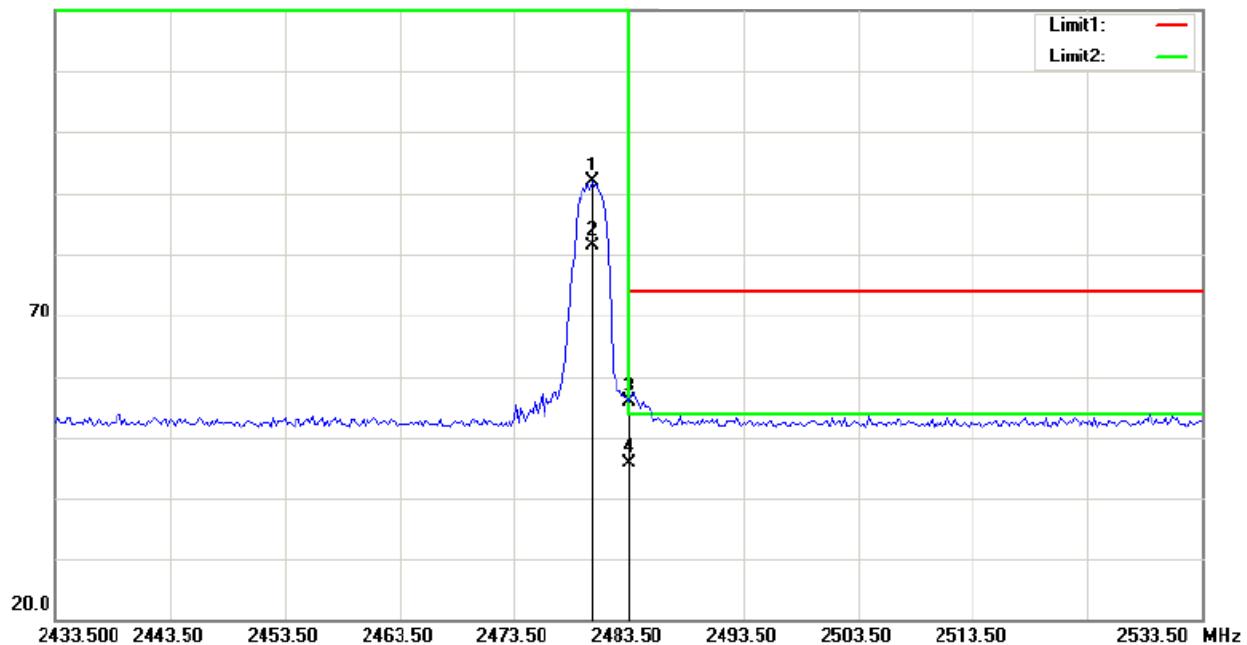
High Channel

Horizontal

Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	2480.300	61.17	peak	30.66	91.83	125.20	147	312	33.37	Fundamental
	2	2480.300	50.79	AVG	30.66	81.45	125.20	147	312	43.75	Fundamental
	3	2483.500	25.16	peak	30.67	55.83	74.00	147	312	18.17	
*	4	2483.500	15.13	AVG	30.67	45.80	54.00	147	312	8.20	
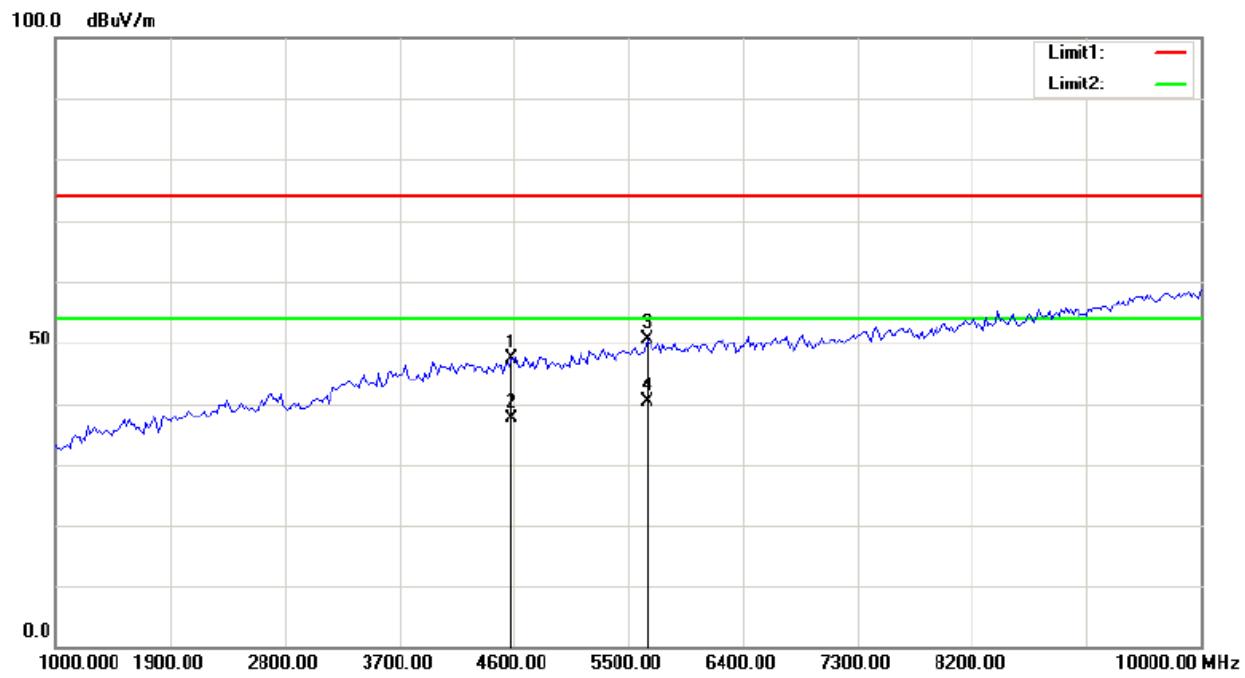
Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	4582.000	37.84	peak	9.64	47.48	74.00	155	244	26.52	
	2	4582.000	27.94	AVG	9.64	37.58	54.00	155	244	16.42	
	3	5644.000	37.02	peak	13.49	50.51	74.00	155	244	23.49	
*	4	5644.000	26.79	AVG	13.49	40.28	54.00	155	244	13.72	

Note: No emission was detected in the range 10-25GHz.
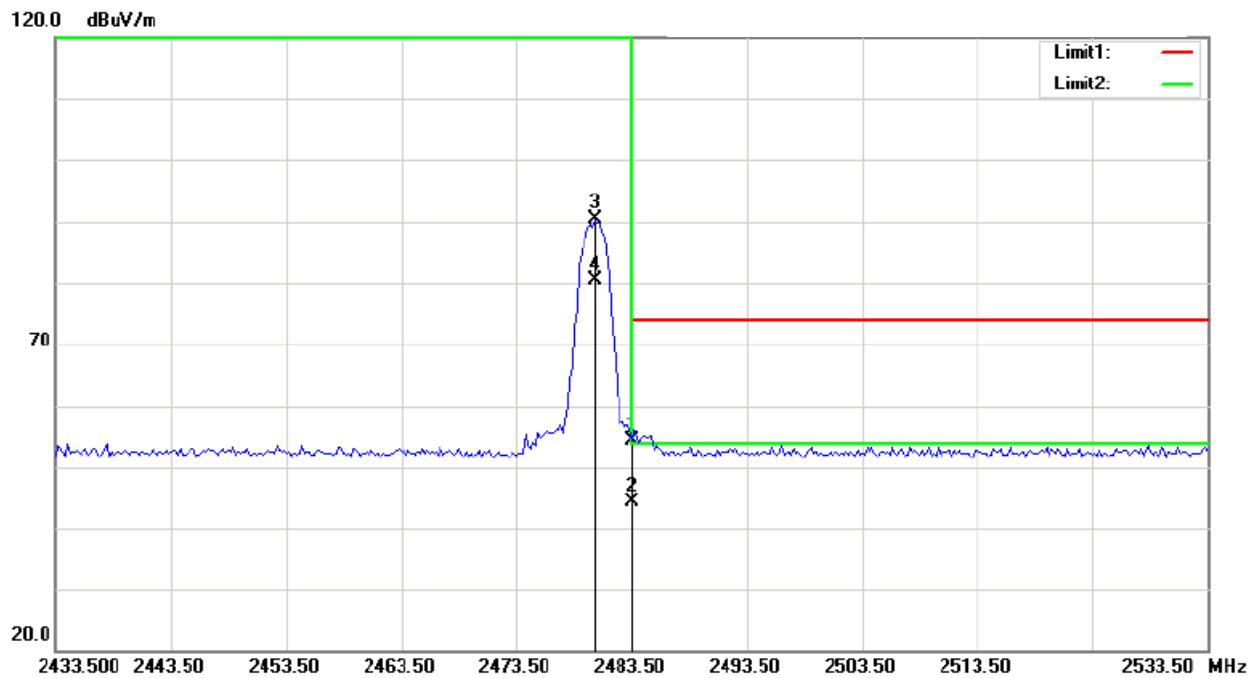
Vertical

| Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	2483.500	23.67	peak	30.67	54.34	74.00	134	275	19.66	
*	2	2483.500	13.63	AVG	30.67	44.30	54.00	134	275	9.70	
	3	2480.300	59.77	peak	30.66	90.43	125.20	134	275	34.77	Fundamental
	4	2480.300	49.83	AVG	30.66	80.49	125.20	134	275	44.71	Fundamental
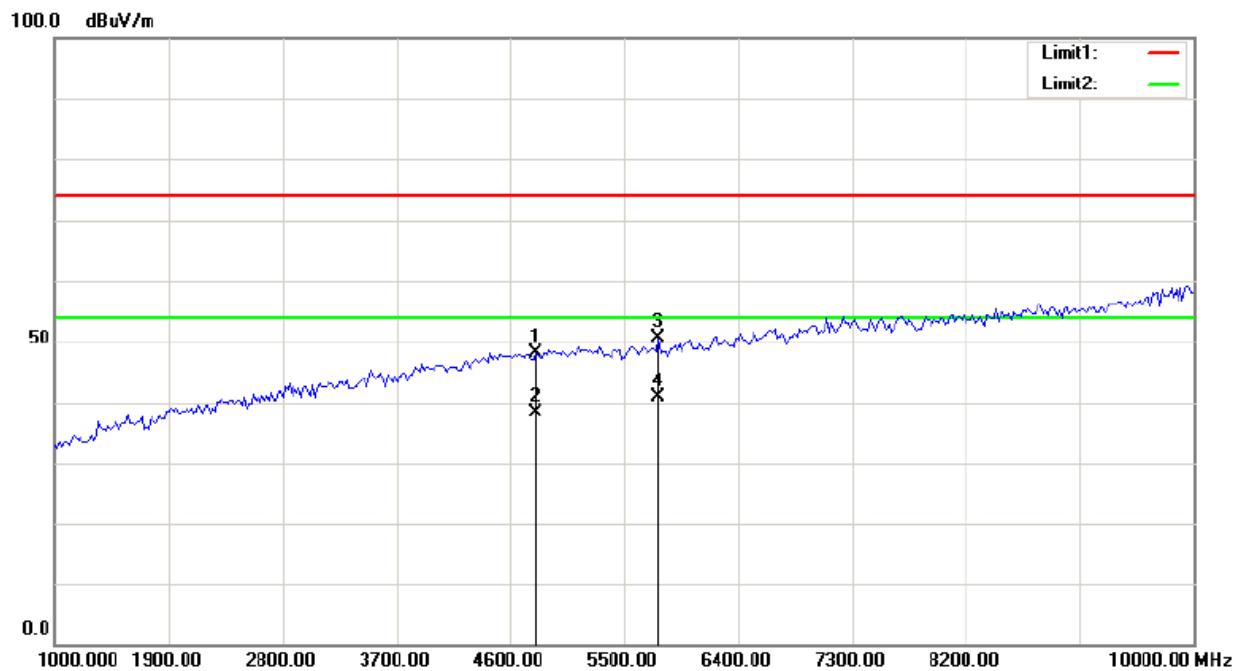
Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	4798.000	37.76	peak	10.31	48.07	74.00	173	252	25.93	
	2	4798.000	28.17	AVG	10.31	38.48	54.00	173	252	15.52	
	3	5770.000	36.81	peak	13.78	50.59	74.00	173	252	23.41	
*	4	5770.000	27.14	AVG	13.78	40.92	54.00	173	252	13.08	

Note: No emission was detected in the range 10-25GHz.

EDR Mode (8-DPSK):

Low Channel, Horizontal
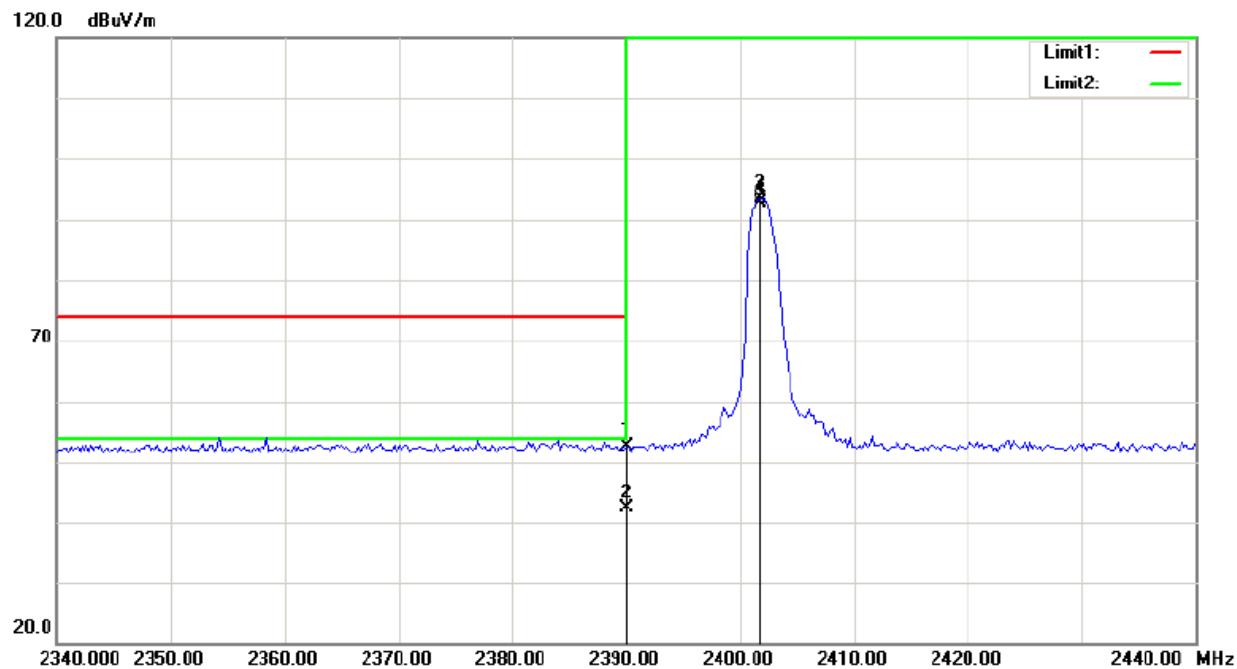
Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	2390.000	22.03	peak	30.48	52.51	74.00	163	268	21.49	
*	2	2390.000	12.02	AVG	30.48	42.50	54.00	163	268	11.50	
	3	2401.800	62.93	peak	30.50	93.43	125.20	163	268	31.77	Fundamental
	4	2401.800	62.14	AVG	30.50	92.64	125.20	163	268	32.56	Fundamental
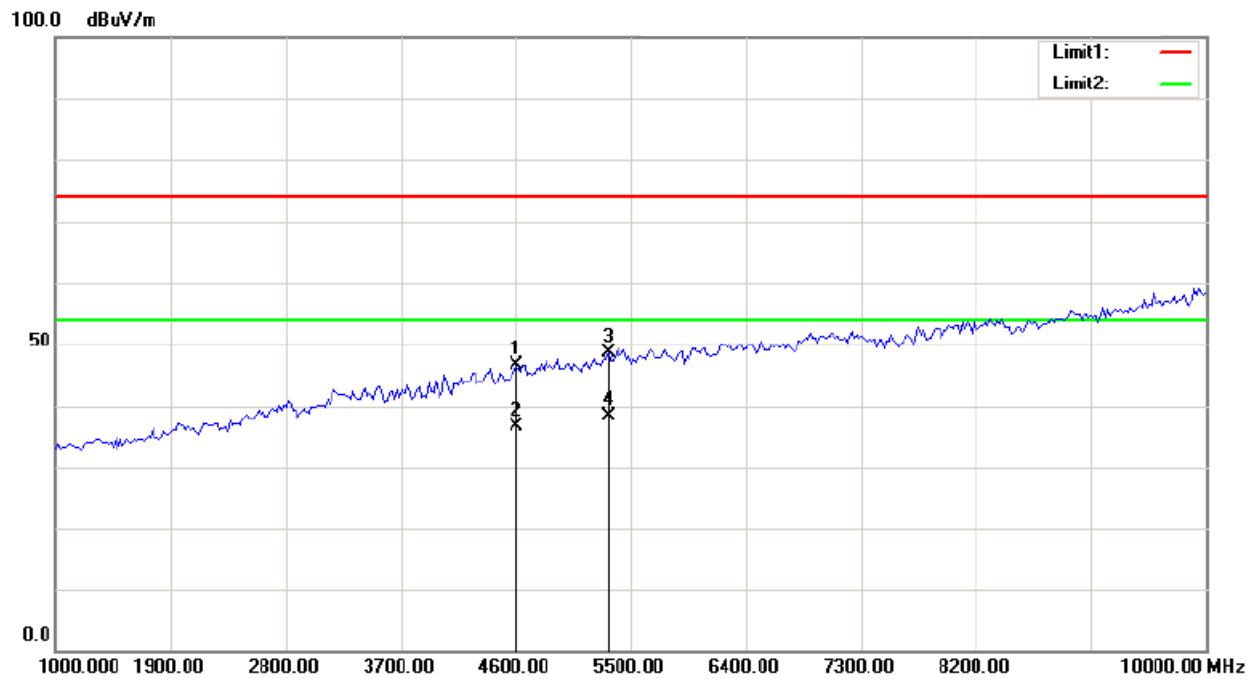
| Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	4600.000	36.91	peak	9.74	46.65	74.00	146	322	27.35	
	2	4600.000	27.01	AVG	9.74	36.75	54.00	146	322	17.25	
	3	5320.000	36.43	peak	12.19	48.62	74.00	146	322	25.38	
*	4	5320.000	26.15	AVG	12.19	38.34	54.00	146	322	15.66	

Note: No emission was detected in the range 10-25GHz.
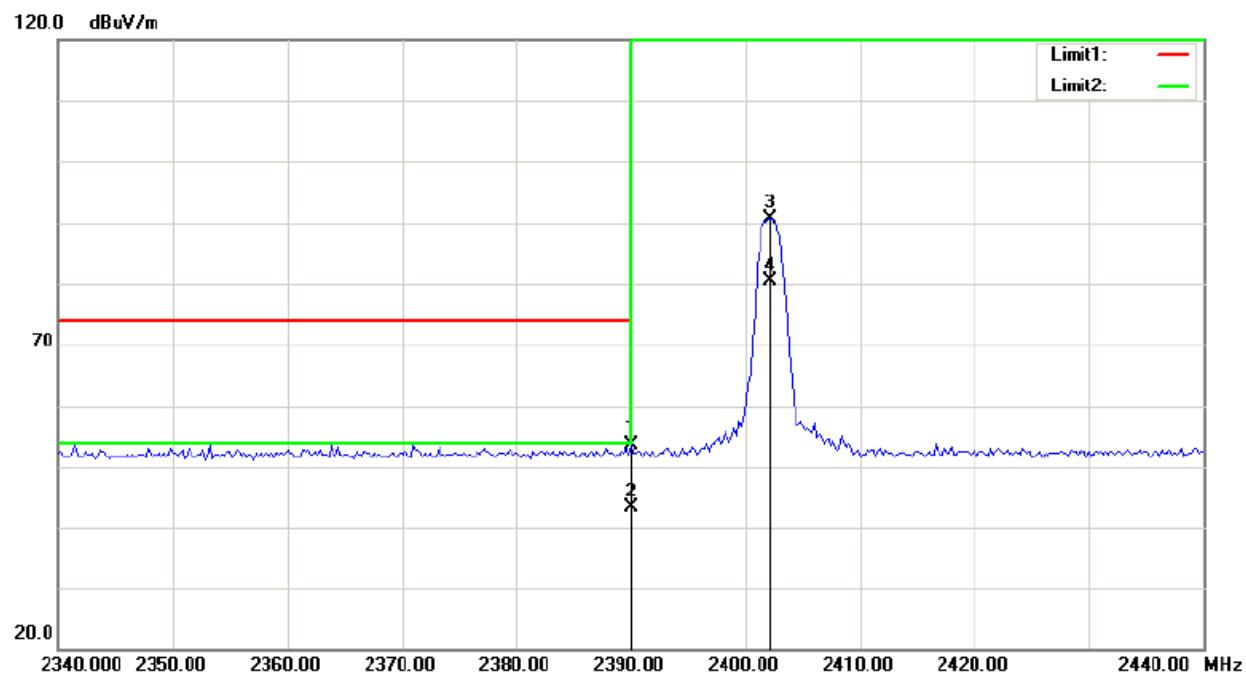
Vertical

| Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	2390.000	23.03	peak	30.48	53.51	74.00	157	243	20.49	
*	2	2390.000	13.02	AVG	30.48	43.50	54.00	157	243	10.50	
	3	2402.200	60.18	peak	30.50	90.68	125.20	157	243	34.52	Fundamental
	4	2402.200	49.84	AVG	30.50	80.34	125.20	157	243	44.86	Fundamental
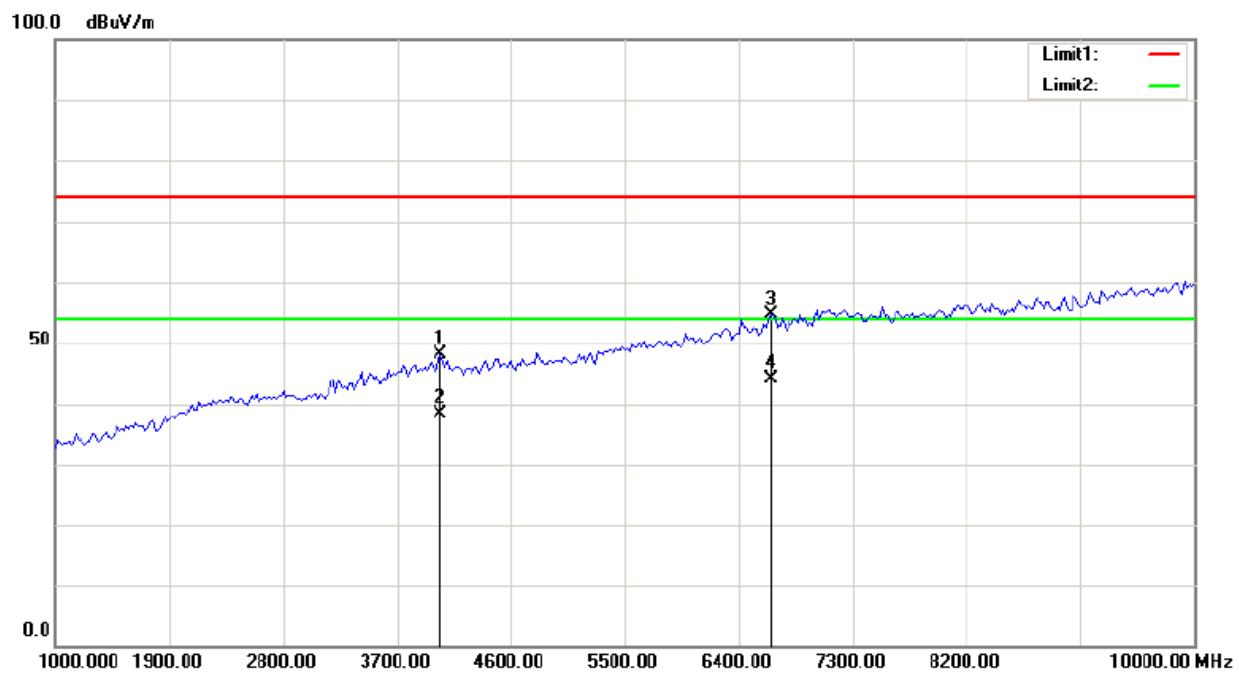
Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	4042.000	39.36	peak	8.71	48.07	74.00	145	258	25.93	
	2	4042.000	29.71	AVG	8.71	38.42	54.00	145	258	15.58	
	3	6652.000	38.85	peak	15.87	54.72	74.00	145	258	19.28	
*	4	6652.000	28.28	AVG	15.87	44.15	54.00	145	258	9.85	

Note: No emission was detected in the range 10-25GHz.
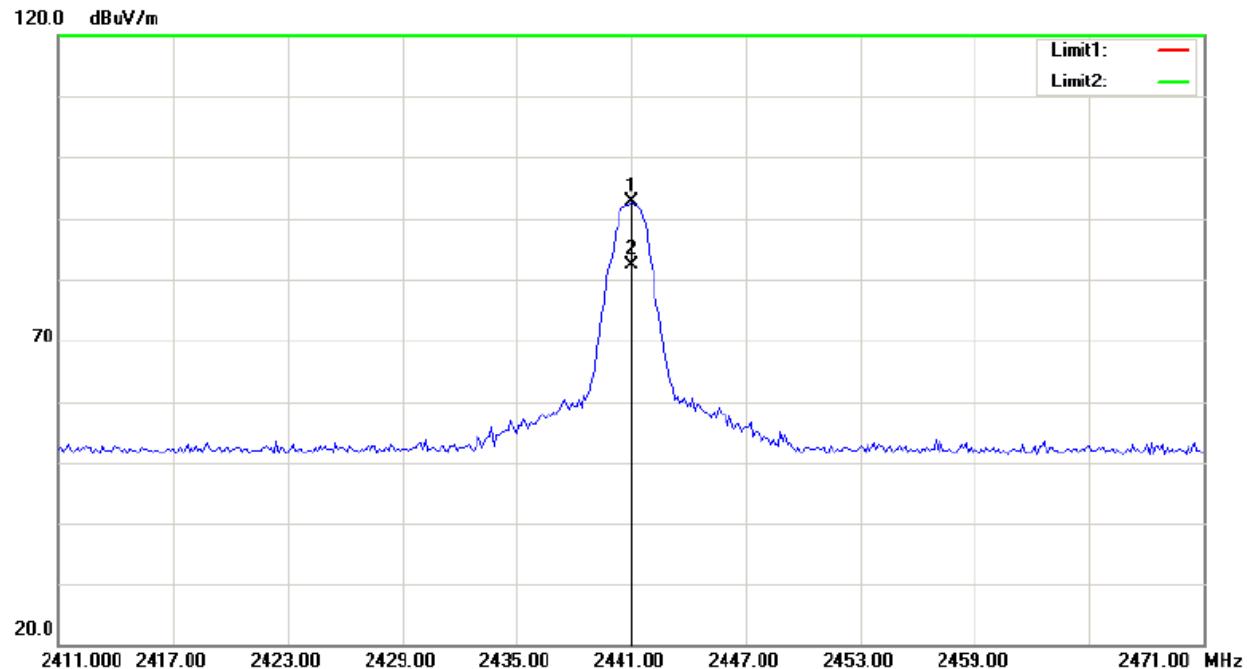
Middle Channel

Horizontal

| Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	1	2441.000	62.01	peak	30.58	92.59	125.20	155	348	32.61	Fundamental
	2	2441.000	51.88	AVG	30.58	82.46	125.20	155	348	42.74	Fundamental
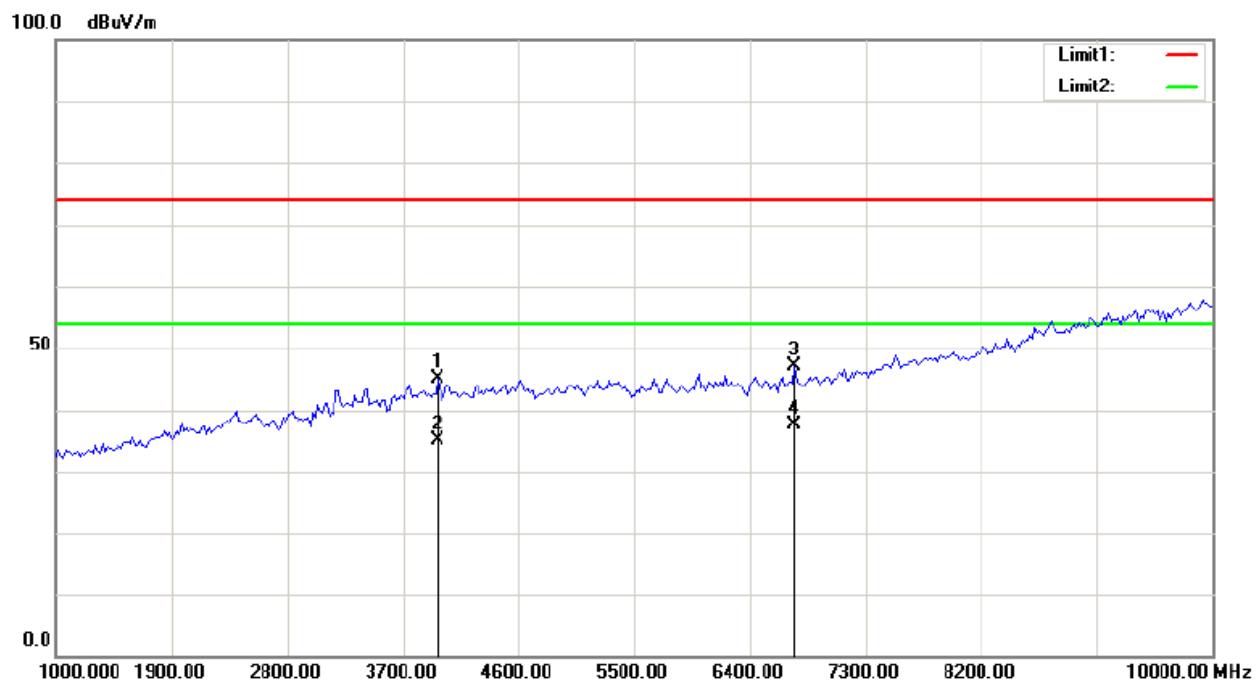
Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	3970.000	36.38	peak	8.63	45.01	74.00	137	254	28.99	
	2	3970.000	26.52	AVG	8.63	35.15	54.00	137	254	18.85	
	3	6742.000	31.05	peak	16.02	47.07	74.00	137	254	26.93	
*	4	6742.000	21.49	AVG	16.02	37.51	54.00	137	254	16.49	

Note: No emission was detected in the range 10-25GHz.
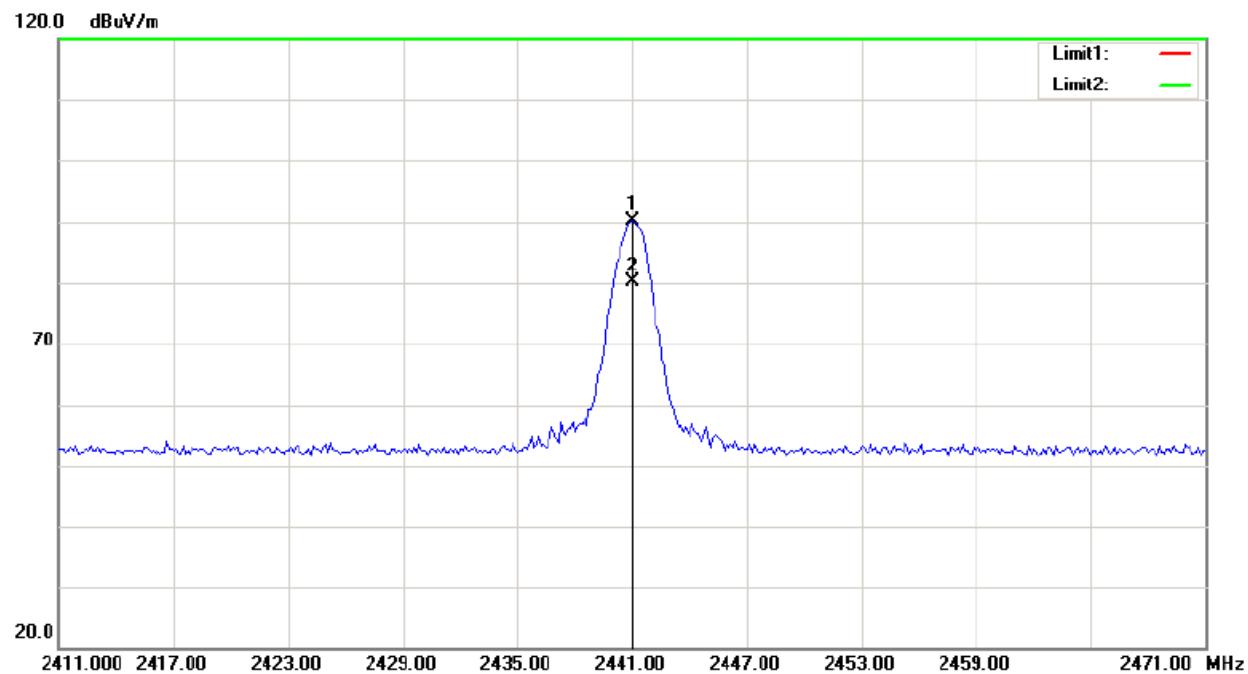
Vertical

| Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	1	2441.000	59.46	peak	30.58	90.04	125.20	162	311	35.16	Fundamental
	2	2441.000	49.67	AVG	30.58	80.25	125.20	162	311	44.95	Fundamental
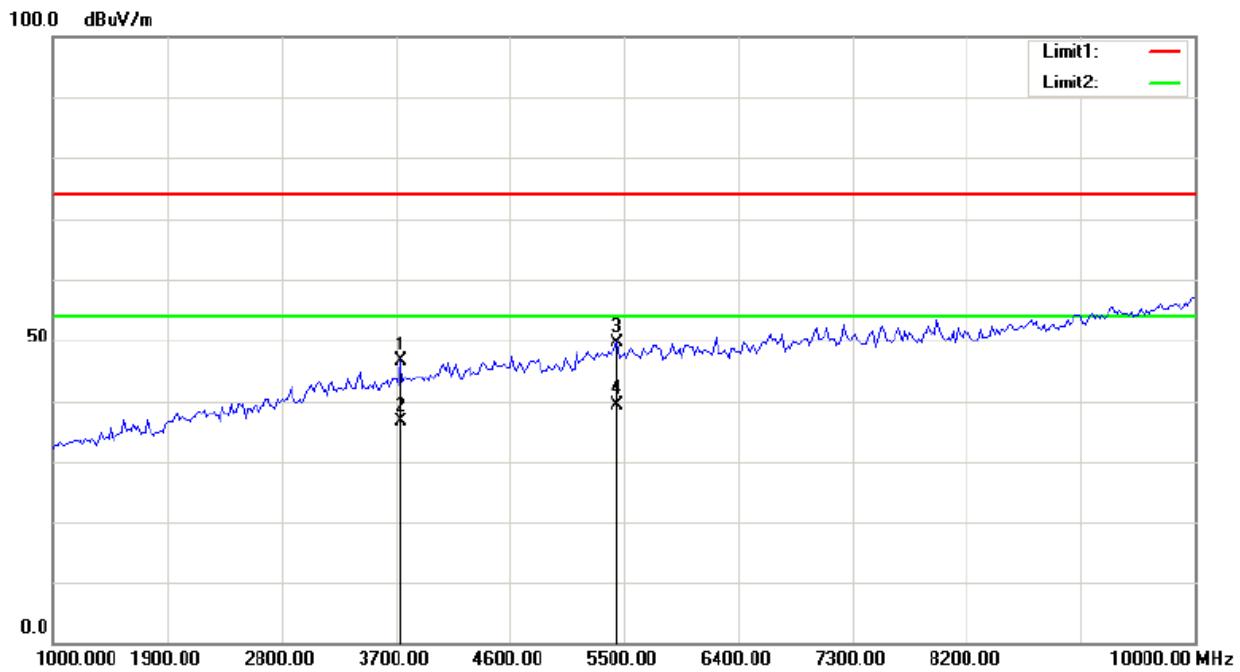
Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	3736.000	38.53	peak	8.06	46.59	74.00	184	275	27.41	
	2	3736.000	28.45	AVG	8.06	36.51	54.00	184	275	17.49	
	3	5446.000	36.80	peak	12.74	49.54	74.00	184	275	24.46	
*	4	5446.000	26.69	AVG	12.74	39.43	54.00	184	275	14.57	

Note: No emission was detected in the range 10-25GHz.
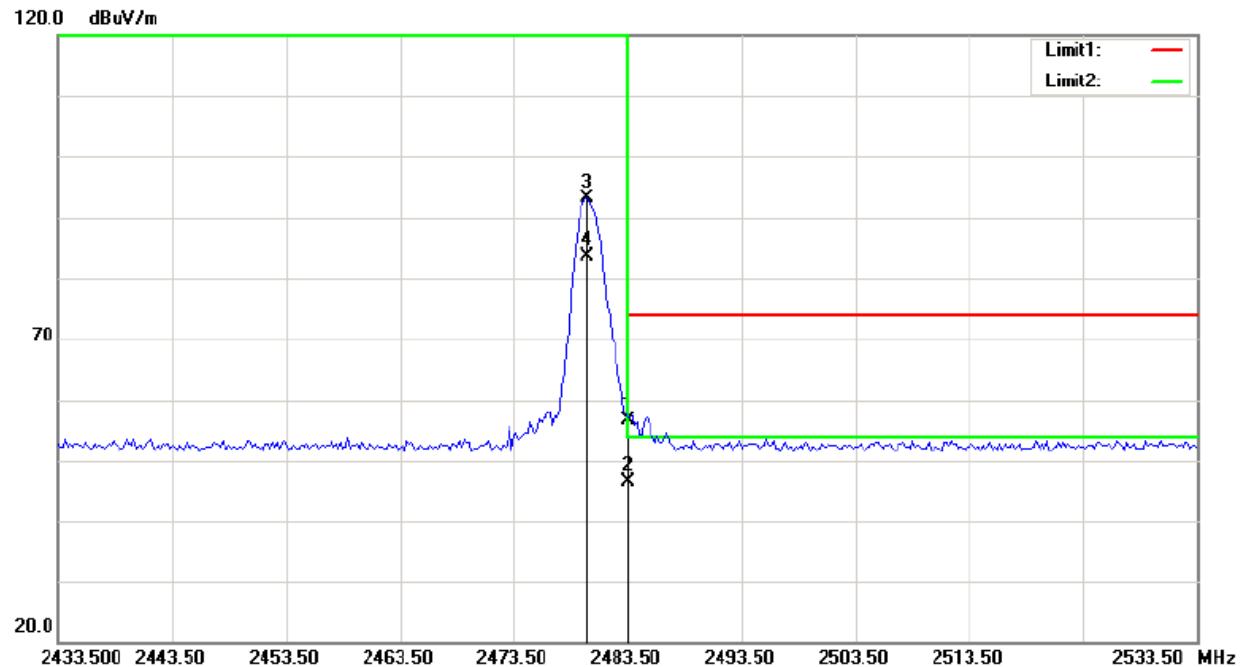
High Channel

Horizontal

Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	2483.500	25.91	peak	30.67	56.58	74.00	166	247	17.42	
*	2	2483.500	15.93	AVG	30.67	46.60	54.00	166	247	7.40	
	3	2479.900	62.59	peak	30.66	93.25	125.20	166	247	31.95	Fundamental
	4	2479.900	53.09	AVG	30.66	83.75	125.20	166	247	41.45	Fundamental
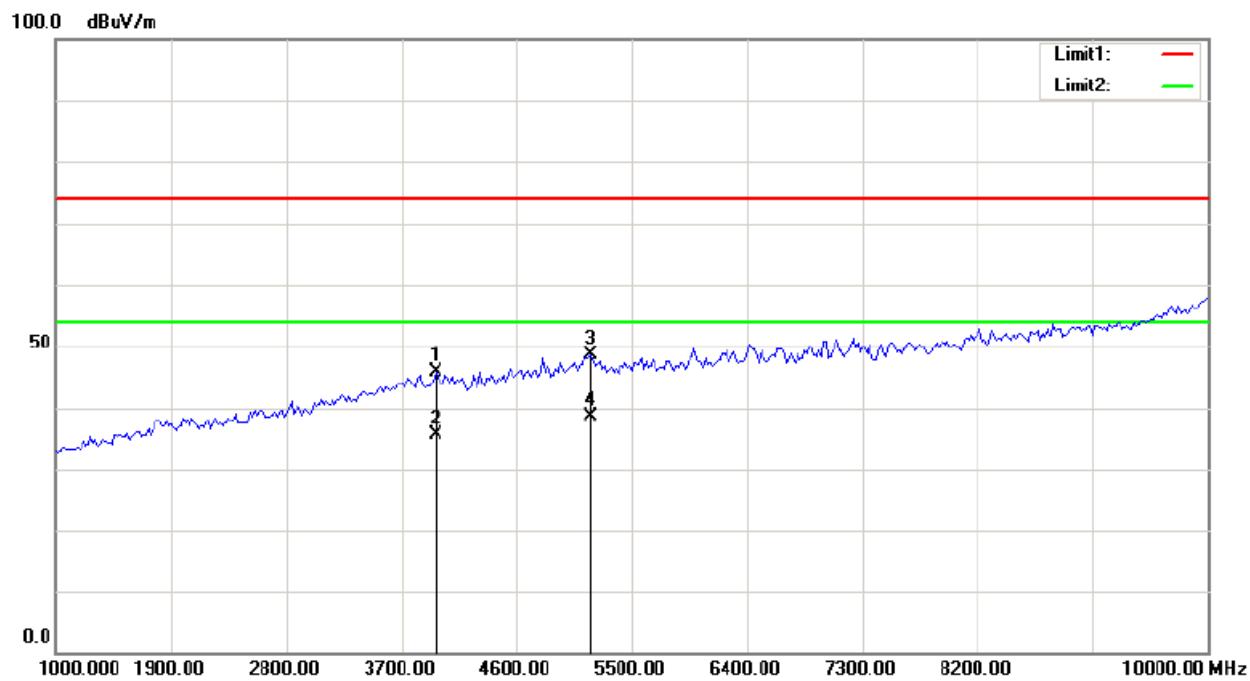
Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	3970.000	37.33	peak	8.63	45.96	74.00	135	243	28.04	
	2	3970.000	26.88	AVG	8.63	35.51	54.00	135	243	18.49	
	3	5176.000	36.93	peak	11.72	48.65	74.00	135	243	25.35	
*	4	5176.000	26.82	AVG	11.72	38.54	54.00	135	243	15.46	

Note: No emission was detected in the range 10-25GHz.
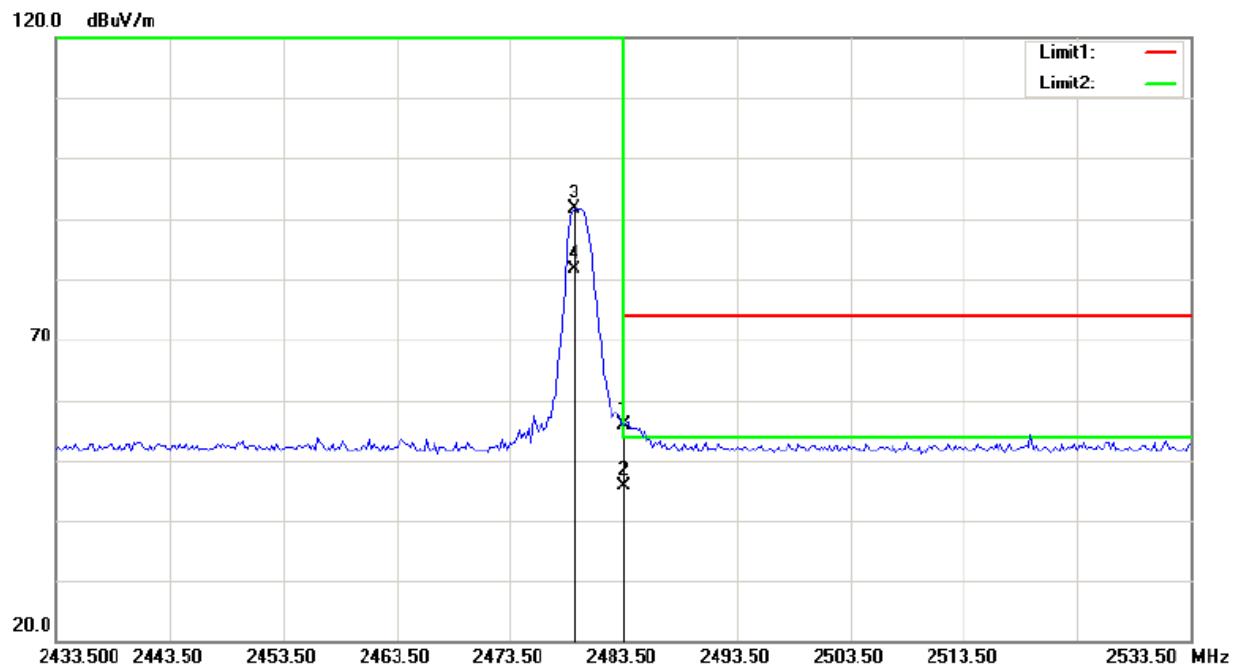
Vertical

| Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	2483.500	25.29	peak	30.67	55.96	74.00	158	267	18.04	
*	2	2483.500	15.23	AVG	30.67	45.90	54.00	158	267	8.10	
	3	2479.100	61.03	peak	30.66	91.69	125.20	158	267	33.51	Fundamental
	4	2479.100	51.01	AVG	30.66	81.67	125.20	158	267	43.53	Fundamental
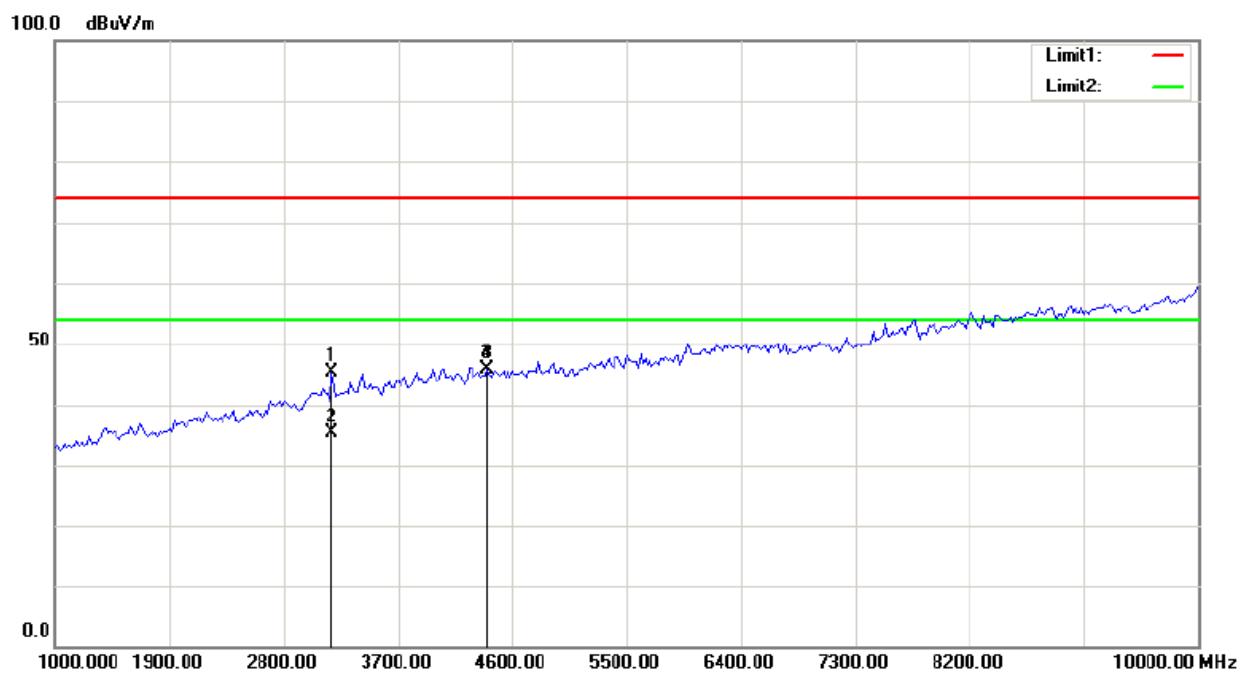
Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	3178.000	39.85	peak	5.47	45.32	74.00	127	241	28.68	
	2	3178.000	30.01	AVG	5.47	35.48	54.00	127	241	18.52	
	3	4402.000	36.54	peak	9.22	45.76	74.00	127	241	28.24	
*	4	4402.000	36.54	AVG	9.22	45.76	54.00	127	241	8.24	

Note: No emission was detected in the range 10-25GHz.

FCC §15.247(a) (1) - CHANNEL SEPARATION TEST

Applicable Standard

Frequency hopping systems shall have hoping channel carrier frequencies separated by a minimum of 25 kHz or the 20dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.50 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20dB bandwidth of the hopping channel, whichever is greater provided the systems operate with an output power no greater than 125 mW.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2016-12-08	2017-12-08
Unknown	RF Cable	Unknown	C-2	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

1. Set the EUT in transmitting mode, spectrum Bandwidth was set at 30 kHz, maxhold the channel.
2. Set the adjacent channel of the EUT maxhold another trace.
3. Measure the channel separation.

Test Data

Environmental Conditions

Temperature:	27.8 °C
Relative Humidity:	44 %
ATM Pressure:	101 kPa

* The testing was performed by Pean Zhu on 2017-10-27.

Test Result: Compliance.

Please refer to following tables and plots

Test Mode: Transmitting

Mode	Channel	Frequency (MHz)	Channel Separation (MHz)	Limit (MHz)
BDR (GFSK)	Low	2402	1.004	0.63
	Middle	2441	1.004	0.63
	High	2480	1.000	0.63
EDR (π/4-DQPSK)	Low	2402	1.004	0.84
	Middle	2441	1.004	0.85
	High	2480	1.004	0.84
EDR (8DPSK)	Low	2402	1.000	0.85
	Middle	2441	1.008	0.85
	High	2480	1.004	0.84

Note: Limit= (2/3) × 20dB bandwidth

BDR Mode (GFSK):

Low Channel
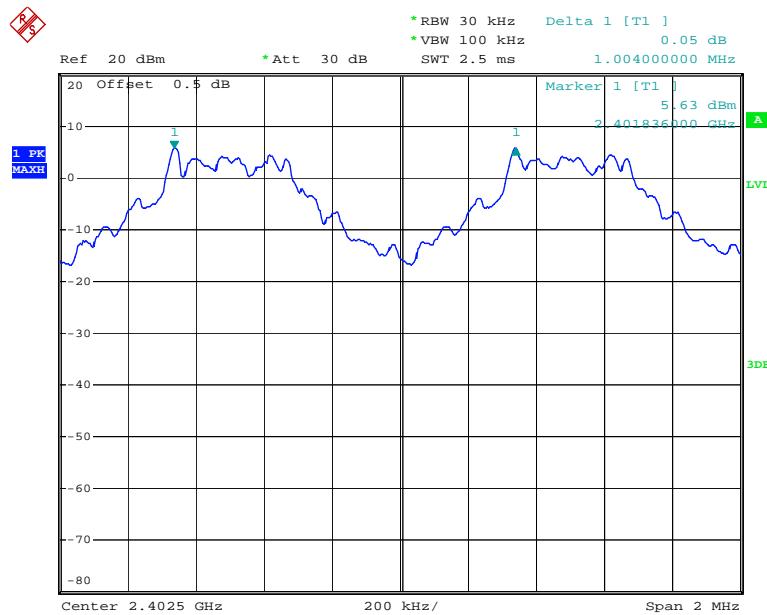
Date: 27.OCT.2017 23:08:53

Middle Channel

```
R                                    *RBW 30 kHz    Delta 1 [T1 ]
S                                    *VBW 100 kHz           -0.02 dB
    Ref  20 dBm            *Att  30 dB   SWT 2.5 ms    1.004000000 MHz
    20  Offset  0.5 dB                          Marker 1 [T1 ]
                                                       5.41 dBm       A
  -10                                          1       2.440836000 GHz
1 PK
MAXH                                                                  LVL
    0

  -10

  -20

  -30

  -40                                                                 3DB

  -50

  -60

  -70

  -80
    Center 2.4415 GHz            200 kHz/             Span 2 MHz
```
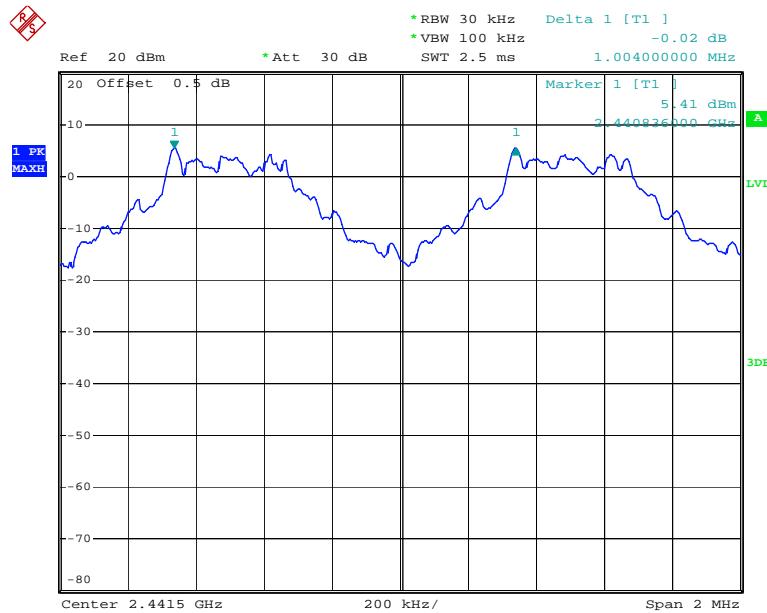
Date: 27.OCT.2017 23:07:36

High Channel

```
R                                    *RBW 30 kHz    Delta 1 [T1 ]
S                                    *VBW 100 kHz           -0.30 dB
    Ref  20 dBm            *Att  30 dB   SWT 2.5 ms    1.000000000 MHz
    20  Offset  0.5 dB                          Marker 1 [T1 ]
                                                       4.98 dBm       A
  -10                                          1       2.478840000 GHz
1 PK
MAXH                                                                  LVL
    0

  -10

  -20

  -30

  -40                                                                 3DB

  -50

  -60

  -70

  -80
    Center 2.4795 GHz            200 kHz/             Span 2 MHz
```
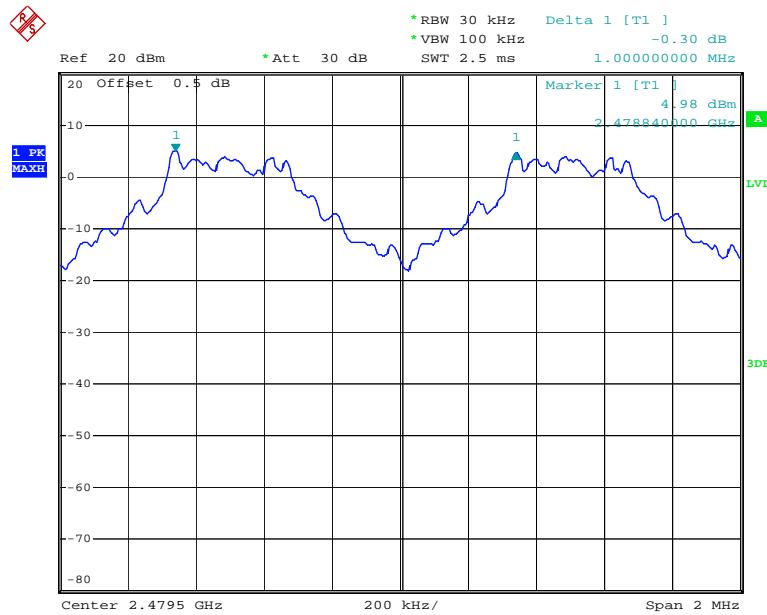
Date: 27.OCT.2017 23:06:44

EDR Mode (π/4-DQPSK):

Low Channel


```
                                      *RBW 30 kHz    Delta 1 [T1 ]
                                      *VBW 100 kHz              -0.04 dB
          Ref  20 dBm        *Att  30 dB   SWT 2.5 ms    1.004000000 MHz
           20 Offset  0.5 dB                  Marker 1 [T1 ]
                                                          4.14 dBm
                                                    2.401836000 GHz
```
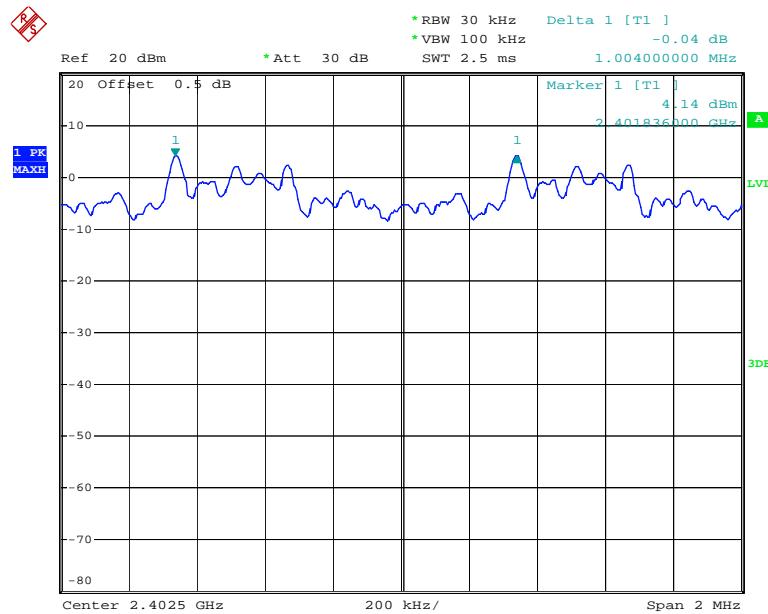
Date: 27.OCT.2017 23:03:45

Middle Channel


```
                                      *RBW 30 kHz    Delta 1 [T1 ]
                                      *VBW 100 kHz               0.04 dB
          Ref  20 dBm        *Att  30 dB   SWT 2.5 ms    1.004000000 MHz
           20 Offset  0.5 dB                  Marker 1 [T1 ]
                                                          3.79 dBm
                                                    2.440836000 GHz
```
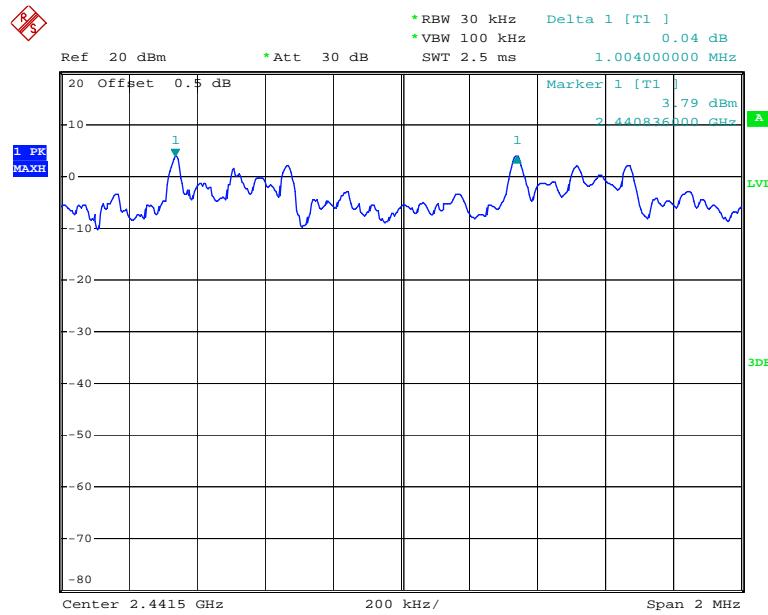
Date: 27.OCT.2017 23:04:38

High Channel


```
*RBW 30 kHz    Delta 1 [T1 ]
*VBW 100 kHz              0.20 dB
Ref  20 dBm        *Att  30 dB    SWT 2.5 ms        1.004000000 MHz

20 Offset  0.5 dB                  Marker 1 [T1 ]
                                        3.32 dBm
                                  2.478836000 GHz
```
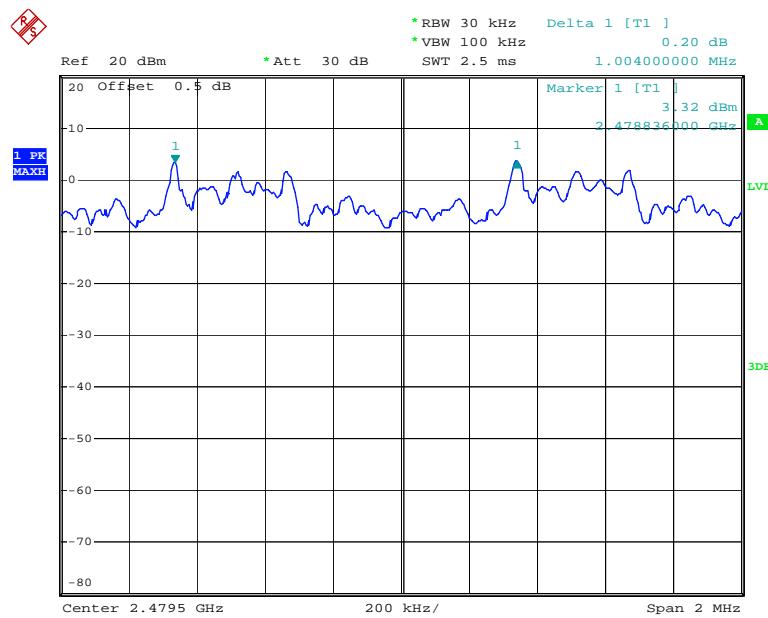
Date: 27.OCT.2017 23:05:25

EDR Mode (8-DPSK):

Low Channel


```
*RBW 30 kHz    Delta 1 [T1 ]
*VBW 100 kHz              0.08 dB
Ref  20 dBm        *Att  30 dB    SWT 2.5 ms        1.000000000 MHz

20 Offset  0.5 dB                  Marker 1 [T1 ]
                                        2.48 dBm
                                  2.401840000 GHz
```
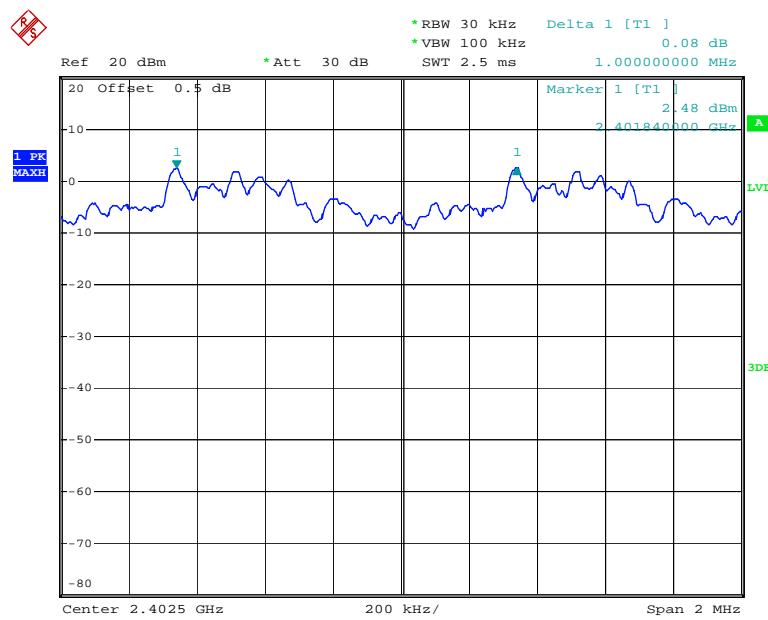
Date: 27.OCT.2017 23:02:33

Middle Channel


```
                                    *RBW 30 kHz    Delta 1 [T1 ]
                                    *VBW 100 kHz              0.28 dB
        Ref  20 dBm        *Att  30 dB   SWT 2.5 ms      1.008000000 MHz
    20  Offset  0.5 dB                    Marker 1 [T1 ]               A
                                                          1.99 dBm
  -10                                                  2.440833000 GHz
1 PK                                                                  LVL
MAXH
    0
  -10
  -20
  -30                                                                3DB
  -40
  -50
  -60
  -70
  -80
        Center 2.4415 GHz              200 kHz/              Span 2 MHz
```
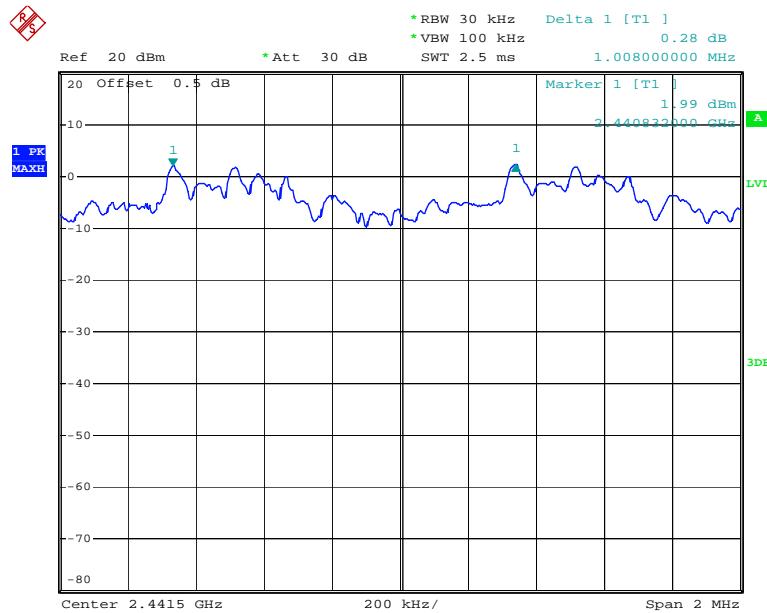
Date: 27.OCT.2017 23:00:48

High Channel


```
                                    *RBW 30 kHz    Delta 1 [T1 ]
                                    *VBW 100 kHz              0.02 dB
        Ref  20 dBm        *Att  30 dB   SWT 2.5 ms      1.004000000 MHz
    20  Offset  0.5 dB                    Marker 1 [T1 ]               A
                                                          1.88 dBm
  -10                                                  2.478836000 GHz
1 PK                                                                  LVL
MAXH
    0
  -10
  -20
  -30
  -40                                                                3DB
  -50
  -60
  -70
  -80
        Center 2.4795 GHz              200 kHz/              Span 2 MHz
```
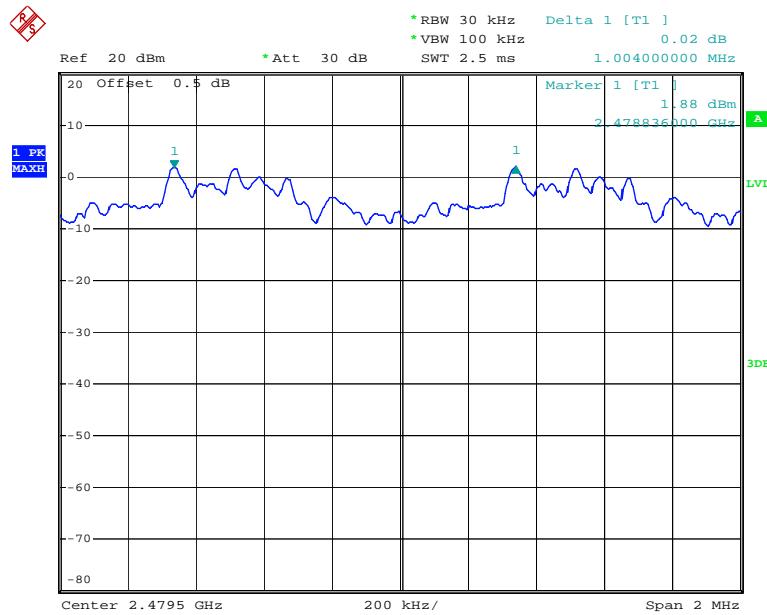
Date: 27.OCT.2017 22:59:54

FCC §15.247(a) (1) – 20 dB BANDWIDTH TESTING

Applicable Standard

Alternatively, frequency hopping systems operating in the 2400–2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT on the test table without connection to measurement instrument. Turn on the EUT. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 20 dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2016-12-08	2017-12-08
Unknown	RF Cable	Unknown	C-2	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:	27.8 °C
Relative Humidity:	44 %
ATM Pressure:	101 kPa

* The testing was performed by Pean Zhu on 2017-10-27.

Test Result: Compliance.

Please refer to following tables and plots

Test Mode: Transmitting

Mode	Channel	Frequency (MHz)	20 dB Bandwidth (MHz)
BDR Mode (GFSK)	Low	2402	0.95
	Middle	2441	0.95
	High	2480	0.95
EDR Mode (π/4-DQPSK)	Low	2402	1.26
	Middle	2441	1.27
	High	2480	1.26
EDR Mode (8-DPSK)	Low	2402	1.27
	Middle	2441	1.27
	High	2480	1.26

BDR Mode (GFSK):

Low Channel
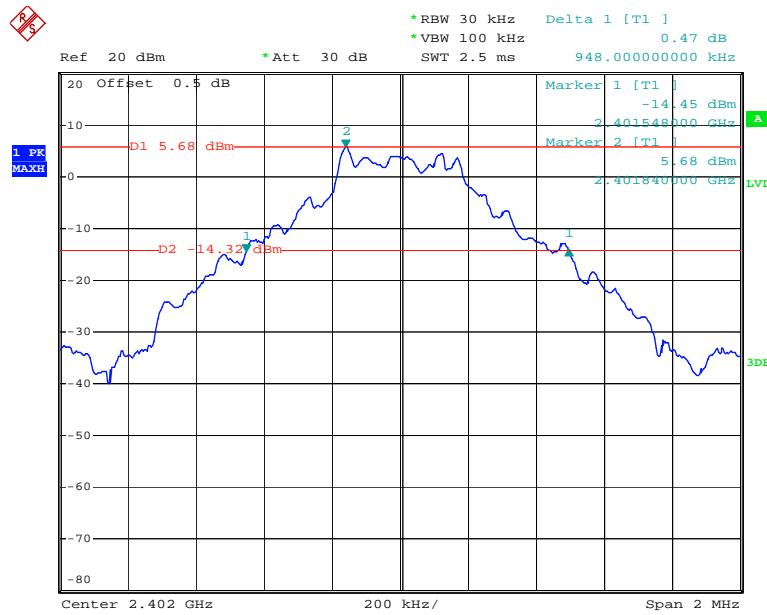
Date: 27.OCT.2017 22:36:45

Middle Channel
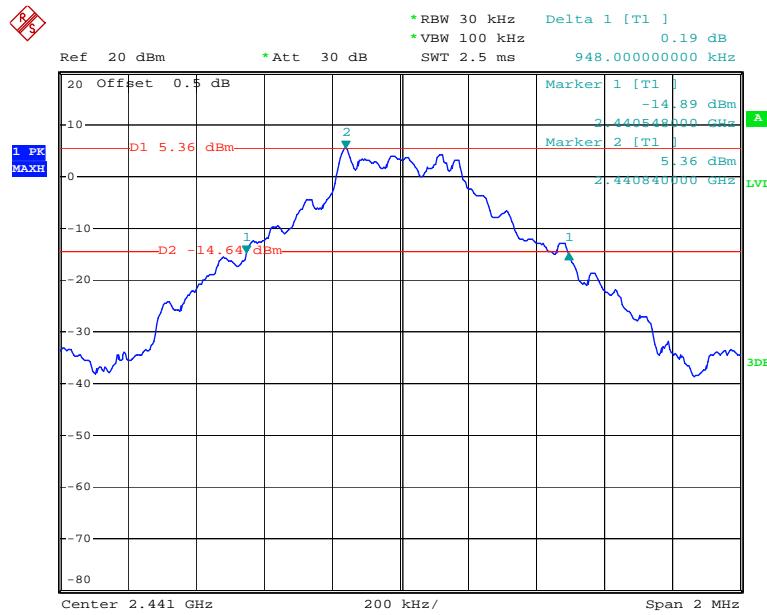
Date: 27.OCT.2017 22:45:18

High Channel
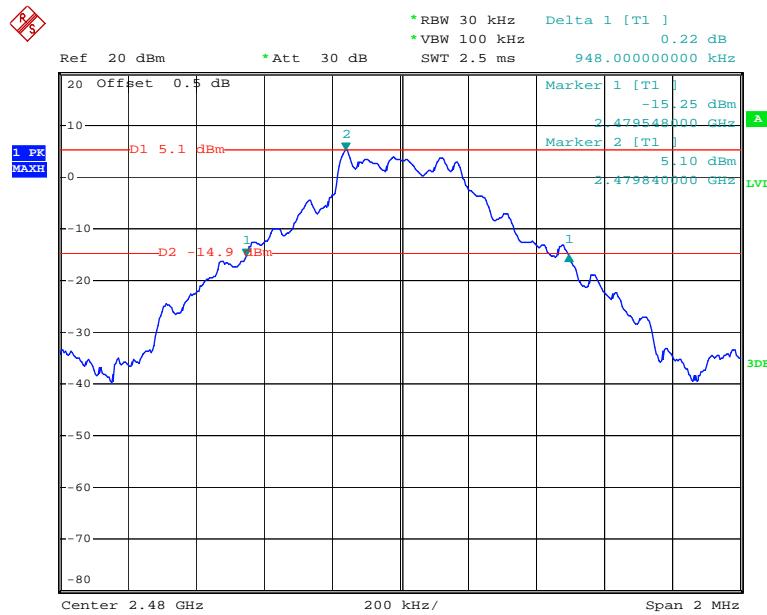
Date: 27.OCT.2017 22:46:29

EDR Mode (π/4-DQPSK):
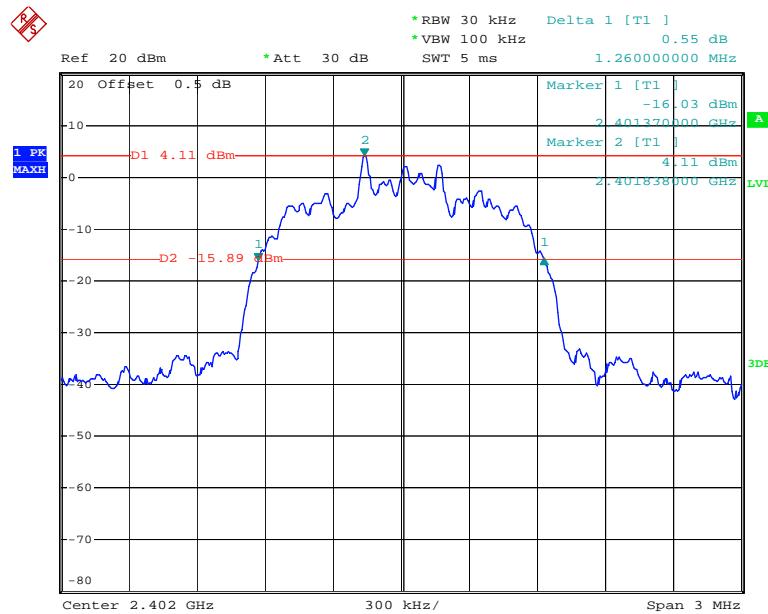
Low Channel

Date: 27.OCT.2017 22:52:41

Middle Channel
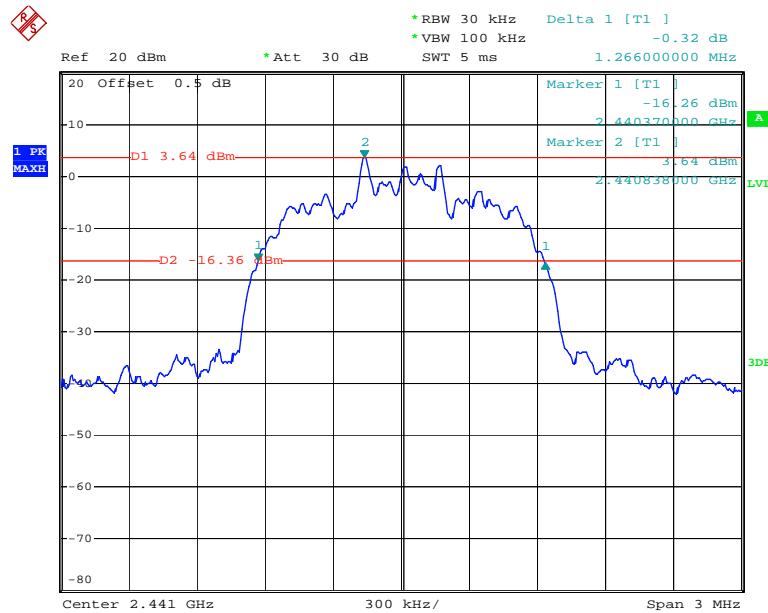
Date: 27.OCT.2017 22:51:21

High Channel


```
                                        *RBW 30 kHz    Delta 1 [T1 ]
                                        *VBW 100 kHz            0.47 dB
        Ref  20 dBm        *Att  30 dB  SWT 5 ms        1.260000000 MHz
        20 Offset  0.5 dB                               Marker 1 [T1 ]
                                                              -16.67 dBm
                                                        2.479370000 GHz
        D1 3.46 dBm                                     Marker 2 [T1 ]
                                                               3.46 dBm
                                                        2.479838000 GHz
        D2 -16.54 dBm
```
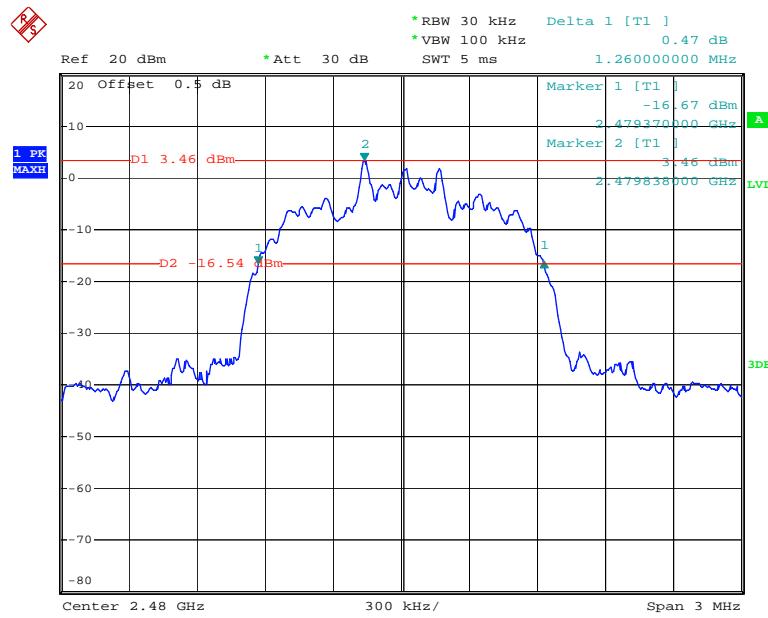
Date: 27.OCT.2017 22:49:40

EDR Mode (8-DPSK):

Low Channel


```
                                        *RBW 30 kHz    Delta 1 [T1 ]
                                        *VBW 100 kHz           -0.05 dB
        Ref  20 dBm        *Att  30 dB  SWT 5 ms        1.266000000 MHz
        20 Offset  0.5 dB                               Marker 1 [T1 ]
                                                              -17.39 dBm
                                                        2.401370000 GHz
        D1 2.55 dBm                                     Marker 2 [T1 ]
                                                               2.55 dBm
                                                        2.401838000 GHz
        D2 -17.45 dBm
```
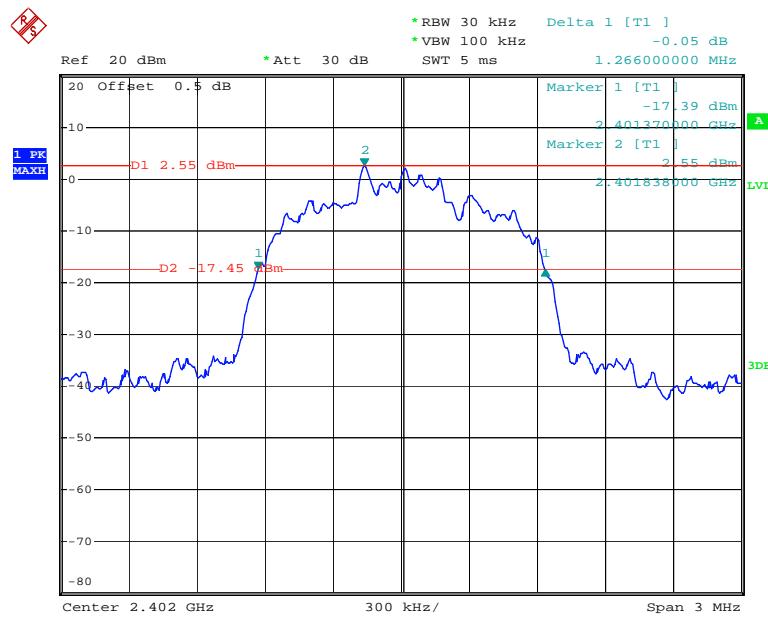
Date: 27.OCT.2017 22:54:41

Middle Channel
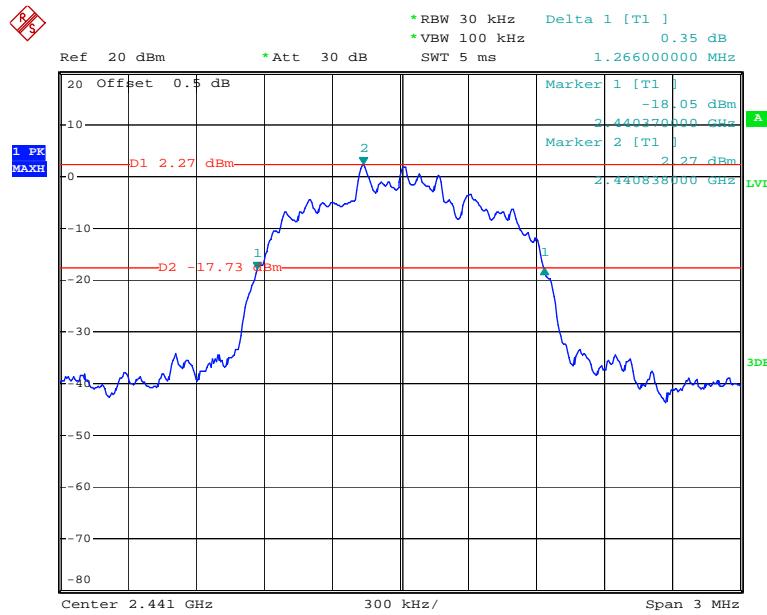
Date: 27.OCT.2017 22:56:17

High Channel
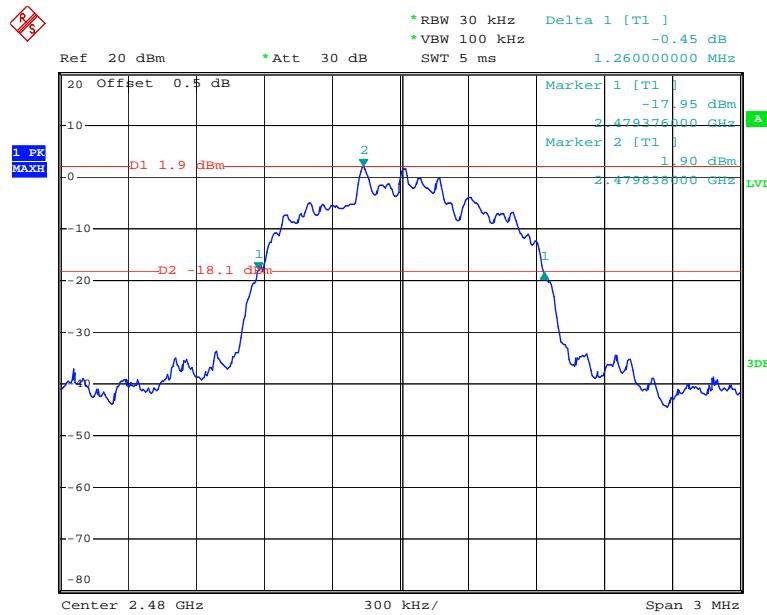
Date: 27.OCT.2017 22:57:20

FCC §15.247(a) (1) (iii) - QUANTITY OF HOPPING CHANNEL TEST

Applicable Standard

Frequency hopping systems in the 2400–2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

Test Procedure

1. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.

2. Set the EUT in hopping mode from first channel to last.

3. By using the Max-Hold function record the Quantity of the channel.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2016-12-08	2017-12-08
Unknown	RF Cable	Unknown	C-2	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:	27.8 °C
Relative Humidity:	44 %
ATM Pressure:	101 kPa

* The testing was performed by Pean Zhu on 2017-10-27.

Test Result: Compliance.

Please refer to following tables and plots

Test Mode: Transmitting

BDR Mode (GFSK):

Frequency Range (MHz)	Number of Hopping Channel	Limit
2400-2483.5	79	≥15

Number of Hopping Channels
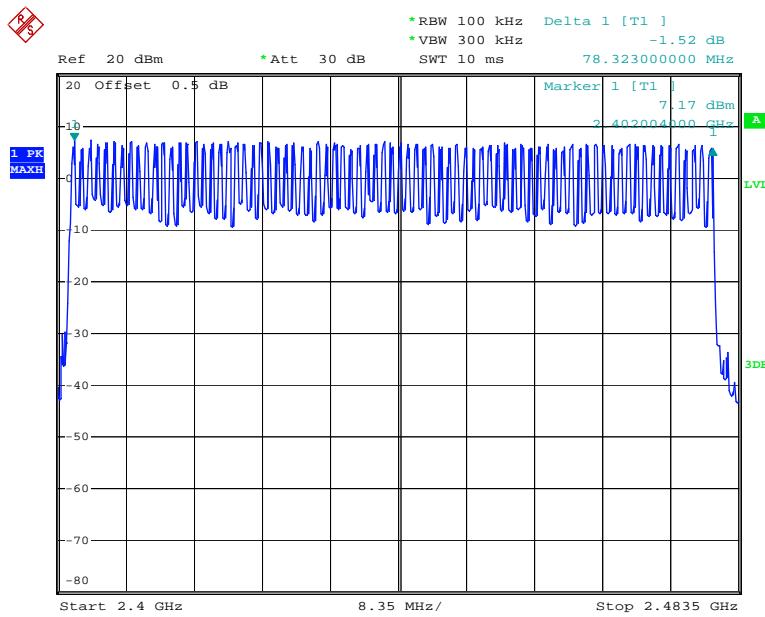
Date: 27.OCT.2017 23:11:38

EDR Mode (π/4-DQPSK):

Frequency Range (MHz)	Number of Hopping Channel	Limit
2400-2483.5	79	≥15

Number of Hopping Channels
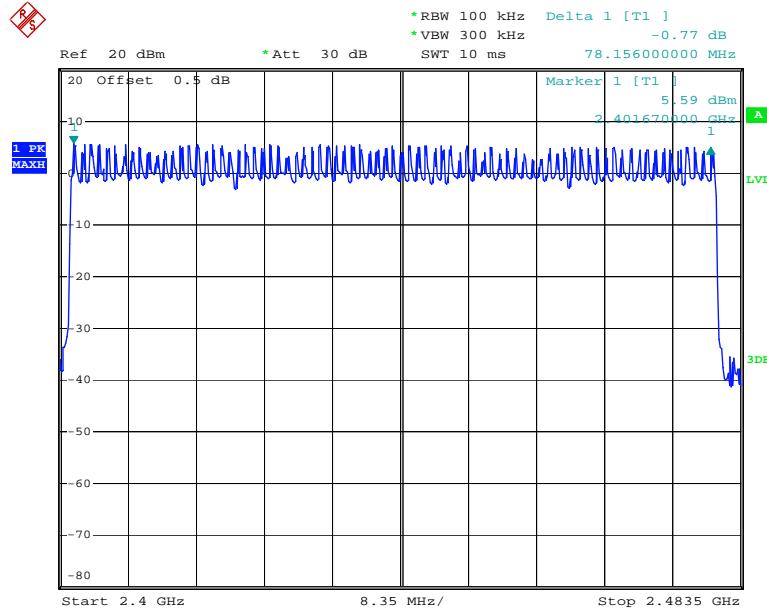
Date: 27.OCT.2017 23:15:16

EDR Mode (8-DPSK):

Frequency Range (MHz)	Number of Hopping Channel	Limit
2400-2483.5	79	≥15

Number of Hopping Channels
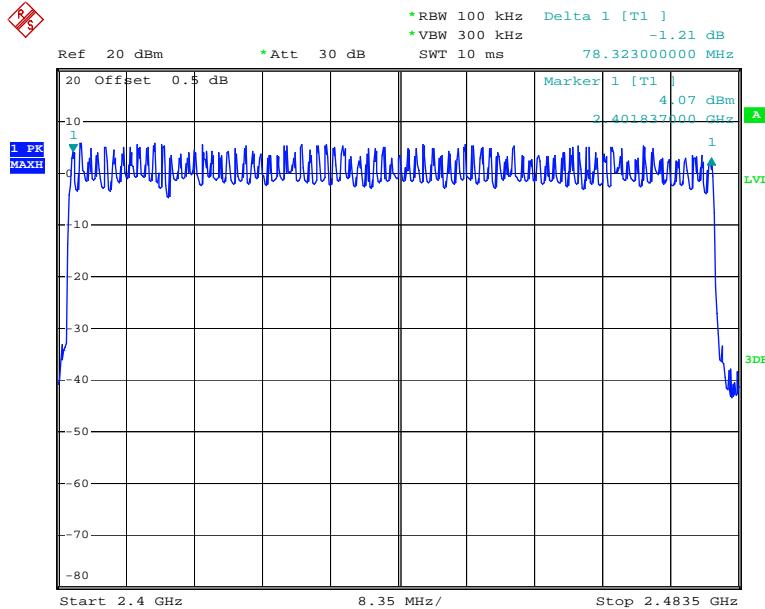
Date: 27.OCT.2017 23:17:53

FCC §15.247(a) (1) (iii) - TIME OF OCCUPANCY (DWELL TIME)

Applicable Standard

Frequency hopping systems in the 2400-2483.5 MHz shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

Test Procedure

The EUT was worked in channel hopping; the time of single pulses was tested.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2016-12-08	2017-12-08
Unknown	RF Cable	Unknown	C-2	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:	27.8 °C
Relative Humidity:	44 %
ATM Pressure:	101 kPa

* The testing was performed by Pean Zhu on 2017-10-27.

Test Result: Compliance.

 Please refer to following tables and plots

Test Mode: Transmitting

BDR Mode (GFSK):

Mode	Channel	Pulse Width (ms)	Dwell Time (s)	Limit (s)	Result
DH1	Low	0.392	0.125	0.4	Compliance
	Middle	0.392	0.125	0.4	Compliance
	High	0.390	0.125	0.4	Compliance
	Note: Dwell time=Pulse time (ms) × (1600/2/79) ×31.6 s				
DH3	Low	1.662	0.266	0.4	Compliance
	Middle	1.662	0.266	0.4	Compliance
	High	1.662	0.266	0.4	Compliance
	Note: Dwell time=Pulse time (ms) × (1600/4/79) ×31.6 s				
DH5	Low	2.920	0.311	0.4	Compliance
	Middle	2.920	0.311	0.4	Compliance
	High	2.920	0.311	0.4	Compliance
	Note: Dwell time=Pulse time (ms) × (1600/6/79) ×31.6 s				

DH1: Low Channel
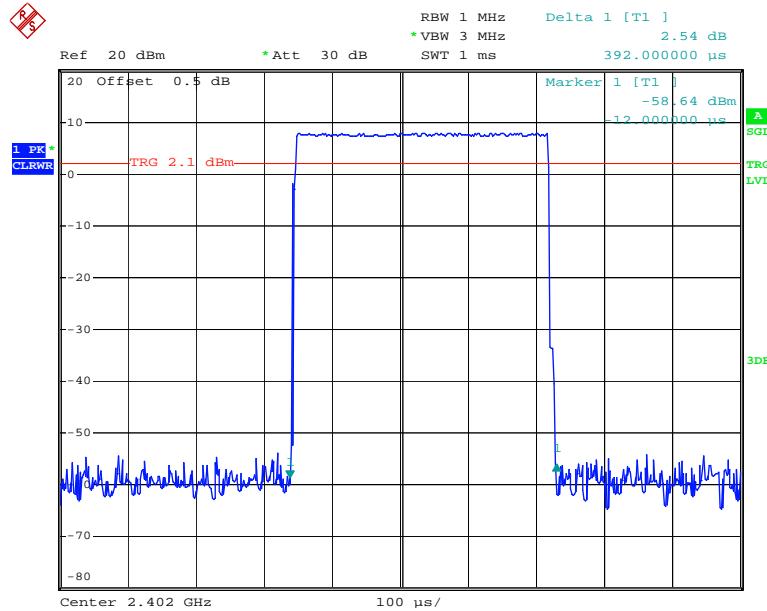
Date: 27.OCT.2017 23:51:34

DH1: Middle Channel

	RBW 1 MHz	Delta 1 [T1]
	*VBW 3 MHz	-0.54 dB
Ref 20 dBm	*Att 30 dB　SWT 1 ms	392.000000 µs

20 Offset 0.5 dB

Marker 1 [T1]
-58.76 dBm
10.000000 µs

1 PK*
CLRWR

TRG 1.1 dBm

A SGL
TRG LVL
3DB

Center 2.441 GHz　　　　　100 µs/
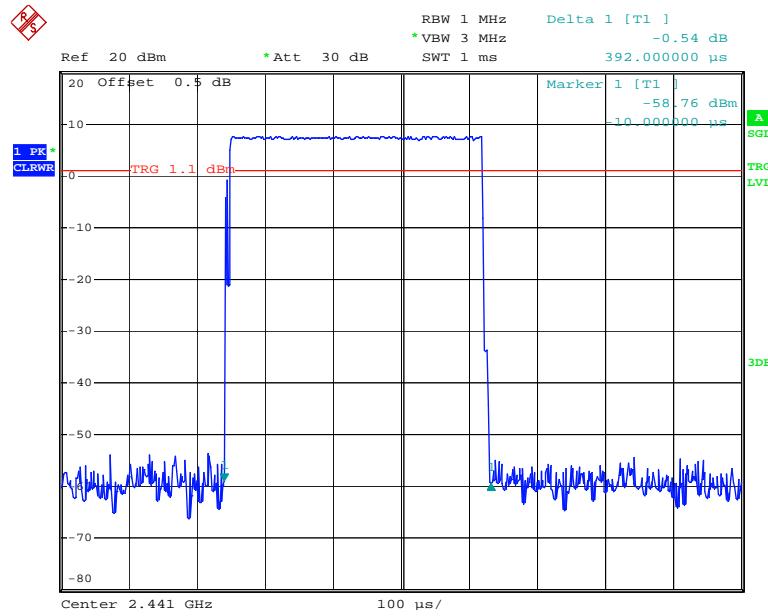
Date: 27.OCT.2017 23:26:53

DH1: High Channel

	RBW 1 MHz	Delta 1 [T1]
	*VBW 3 MHz	1.83 dB
Ref 20 dBm	*Att 30 dB　SWT 1 ms	390.000000 µs

20 Offset 0.5 dB

Marker 1 [T1]
-60.08 dBm
10.000000 µs

1 PK*
CLRWR

TRG 1.4 dBm

A SGL
TRG LVL
3DB

Center 2.48 GHz　　　　　100 µs/
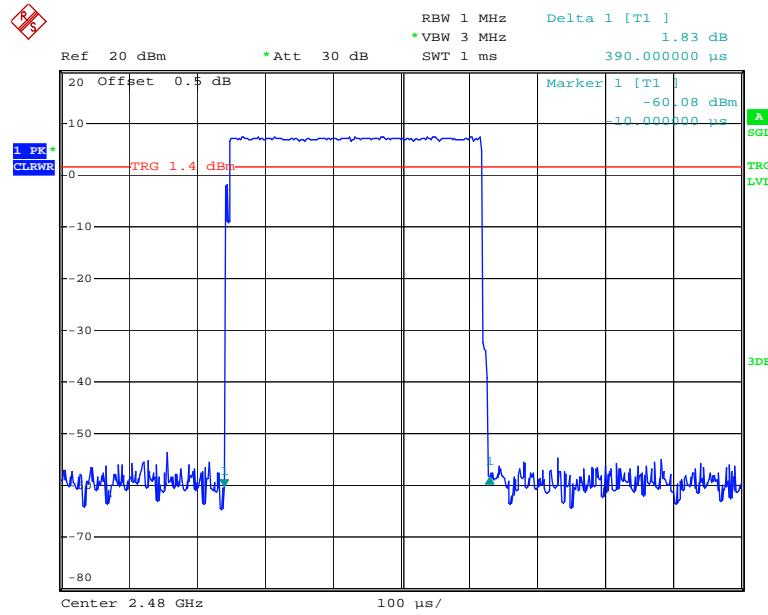
Date: 27.OCT.2017 23:27:02

DH3: Low Channel


```
                                                RBW 1 MHz     Delta 1 [T1 ]
                                              * VBW 3 MHz              -0.20 dB
        Ref  20 dBm          * Att  30 dB      SWT 3 ms            1.662000 ms
```
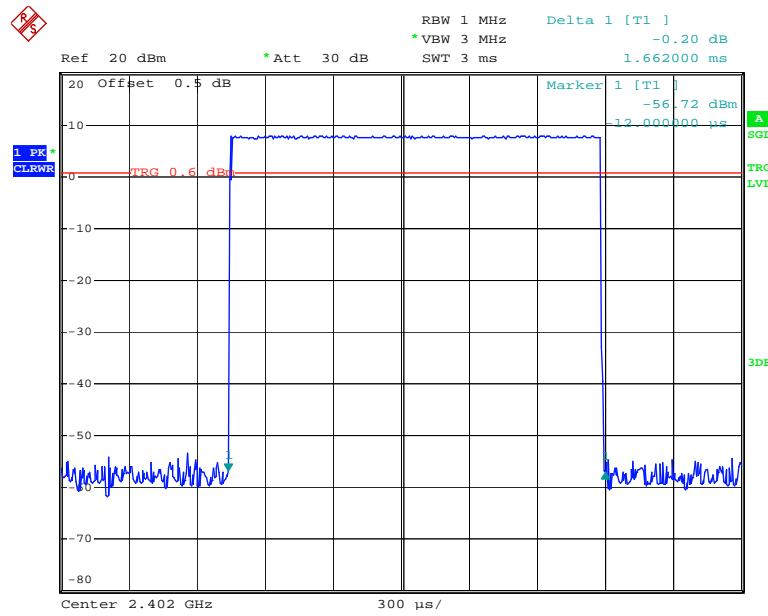
Date: 27.OCT.2017 23:27:56

DH3: Middle Channel


```
                                                RBW 1 MHz     Delta 1 [T1 ]
                                              * VBW 3 MHz               2.11 dB
        Ref  20 dBm          * Att  30 dB      SWT 3 ms            1.662000 ms
```
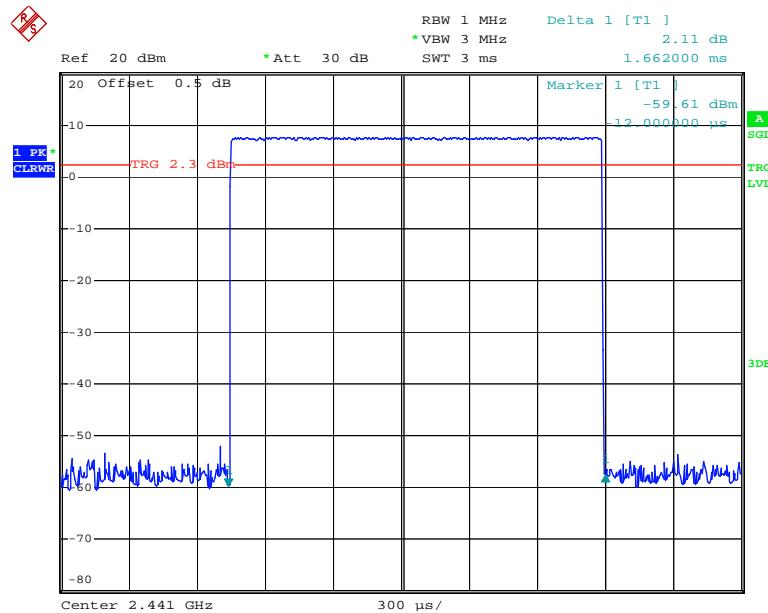
Date: 27.OCT.2017 23:28:05

DH3:　High Channel

	RBW 1 MHz
	*VBW 3 MHz
Ref 20 dBm	*Att 30 dB
	SWT 3 ms

Delta 1 [T1]　1.04 dB
1.662000 ms

Marker 1 [T1]
-59.12 dBm
12.000000 µs

20 Offset 0.5 dB

TRG 0.3 dBm

Center 2.48 GHz　　　　300 µs/
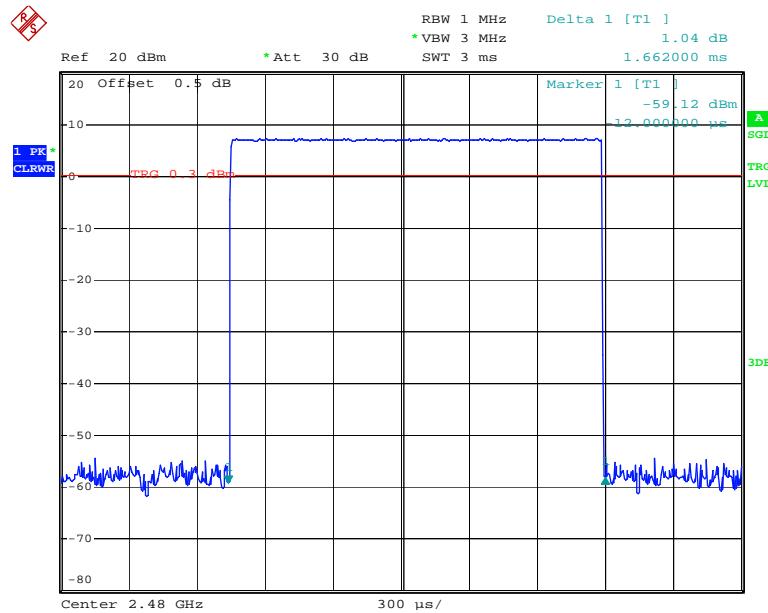
Date: 27.OCT.2017 23:28:13

DH5:　Low Channel

Delta 1 [T1]　0.97 dB
2.920000 ms

Marker 1 [T1]
-57.07 dBm
20.000000 µs

20 Offset 0.5 dB

TRG 2.8 dBm

Center 2.402 GHz　　　　500 µs/
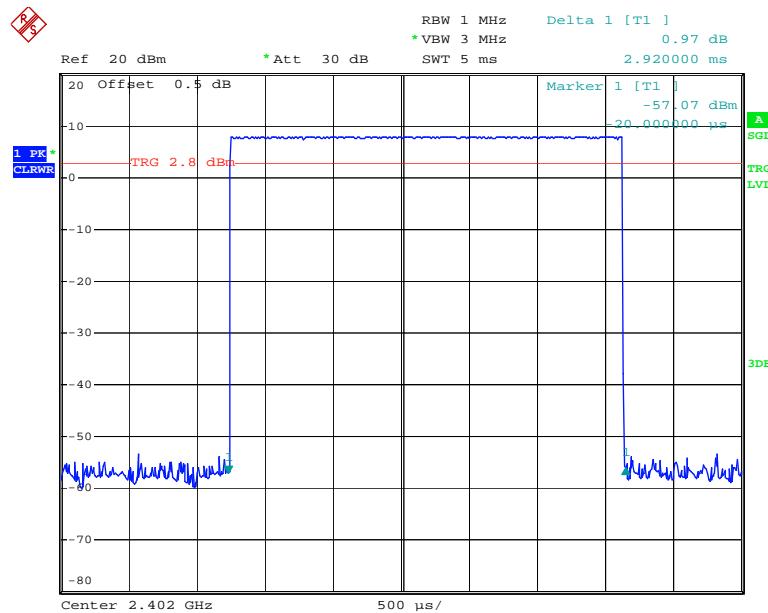
Date: 27.OCT.2017 23:28:50

DH5: Middle Channel
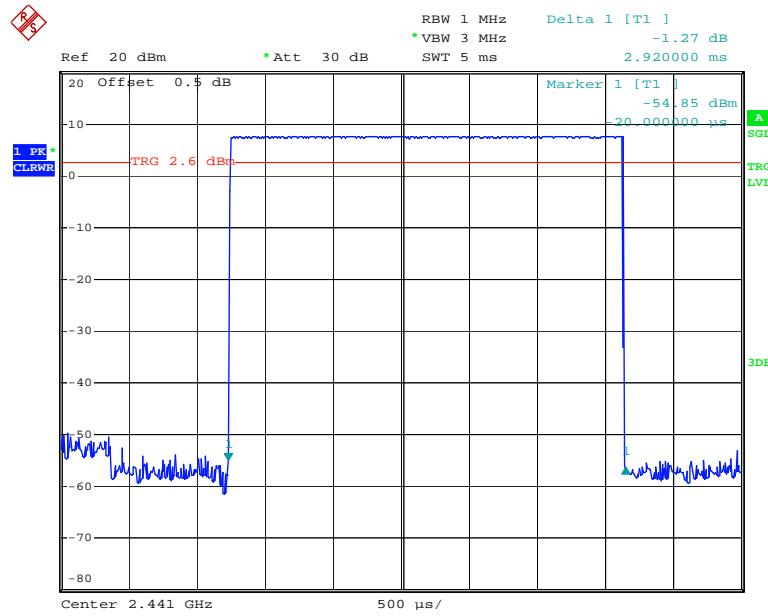
Date: 27.OCT.2017 23:28:59

DH5: High Channel
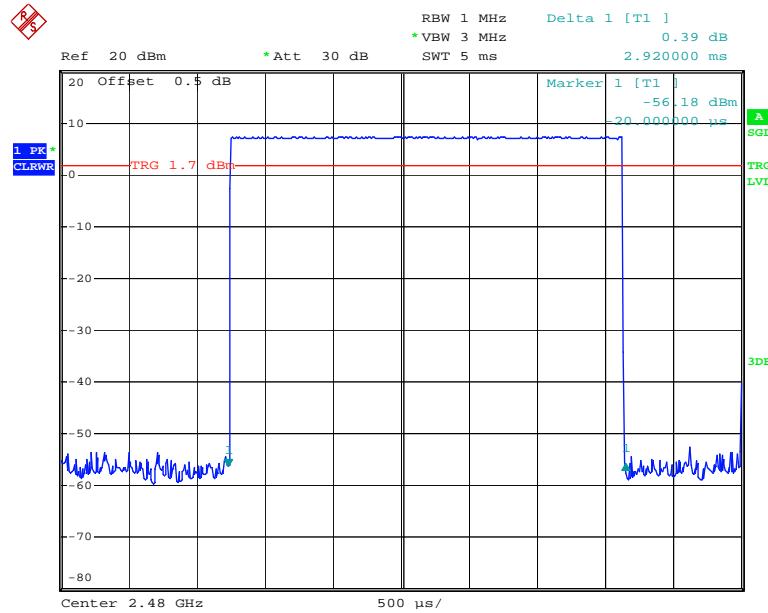
Date: 27.OCT.2017 23:29:07

EDR Mode (π/4-DQPSK):

Mode	Channel	Pulse Width (ms)	Dwell Time (s)	Limit (s)	Result
2DH1	Low	0.398	0.127	0.4	Compliance
	Middle	0.396	0.127	0.4	Compliance
	High	0.398	0.127	0.4	Compliance
	Note: Dwell time=Pulse time (ms) × (1600/2/79) ×31.6 s				
2DH3	Low	1.662	0.266	0.4	Compliance
	Middle	1.662	0.266	0.4	Compliance
	High	1.662	0.266	0.4	Compliance
	Note: Dwell time=Pulse time (ms) × (1600/4/79) ×31.6 s				
2DH5	Low	2.920	0.311	0.4	Compliance
	Middle	2.920	0.311	0.4	Compliance
	High	2.920	0.311	0.4	Compliance
	Note: Dwell time=Pulse time (ms) × (1600/6/79) ×31.6 s				

2DH1: Low Channel
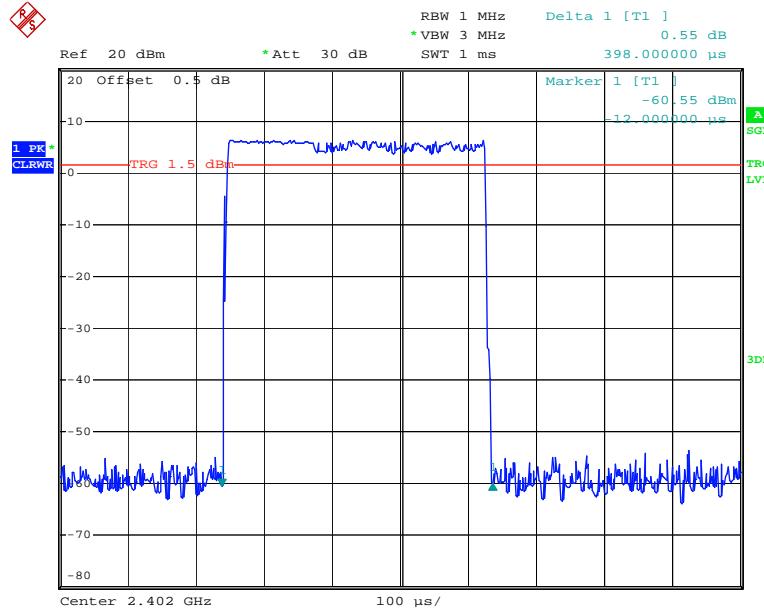
Date: 27.OCT.2017 23:29:35

2DH1: Middle Channel

		RBW 1 MHz	Delta 1 [T1]	
		*VBW 3 MHz		1.69 dB
Ref 20 dBm	*Att 30 dB	SWT 1 ms		396.000000 µs

```
20  Offset  0.5 dB                              Marker 1 [T1 ]
                                                      -57.53 dBm
10                                                10.000000 µs      A
                                                                    SGL
 0  ─TRG 2.5 dBm                                                    TRG
                                                                    LVL
-10

-20

-30                                                                3DB
-40

-50
                                           1
-60

-70

-80
Center 2.441 GHz                    100 µs/
```
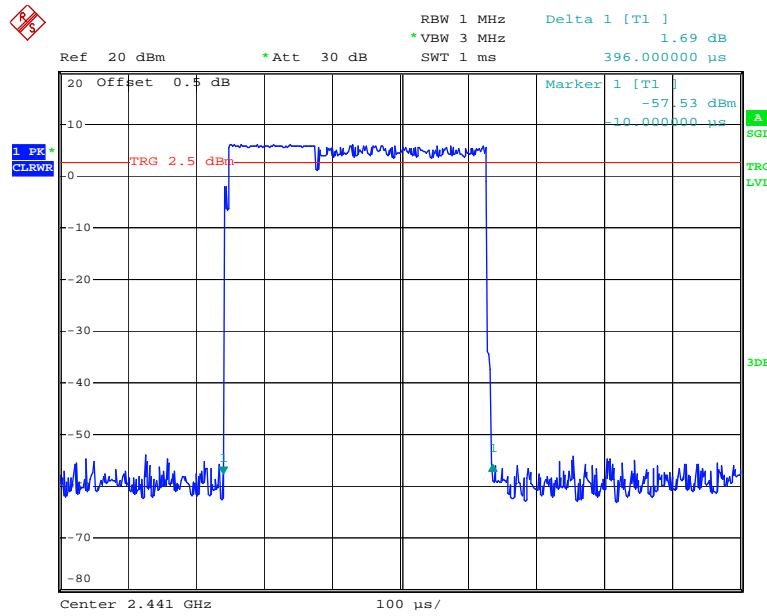
Date: 27.OCT.2017 23:29:45

2DH1: High Channel

		RBW 1 MHz	Delta 1 [T1]	
		*VBW 3 MHz		-0.54 dB
Ref 20 dBm	*Att 30 dB	SWT 1 ms		398.000000 µs

```
20  Offset  0.5 dB                              Marker 1 [T1 ]
                                                      -59.91 dBm
10                                                10.000000 µs      A
                                                                    SGL
 0  ─TRG 2.8 dBm                                                    TRG
                                                                    LVL
-10

-20

-30                                                                3DB
-40

-50

-60

-70

-80
Center 2.48 GHz                     100 µs/
```
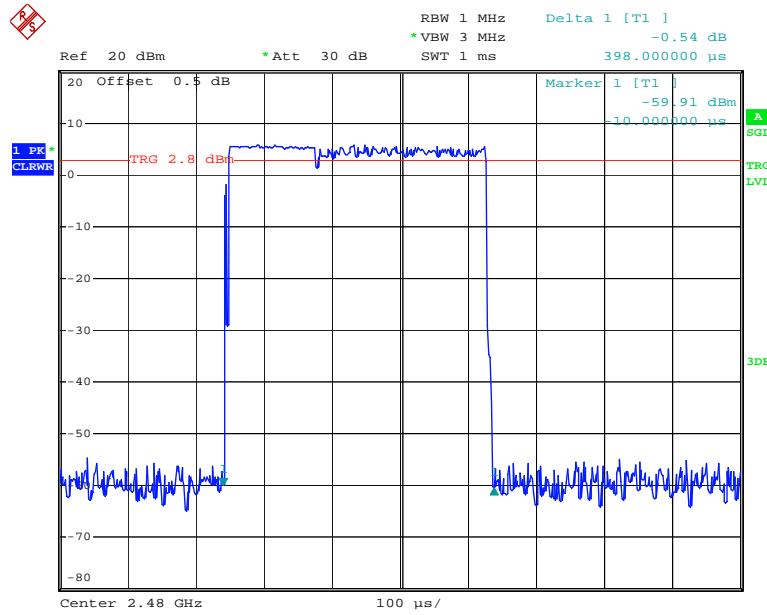
Date: 27.OCT.2017 23:29:54

2DH3: Low Channel
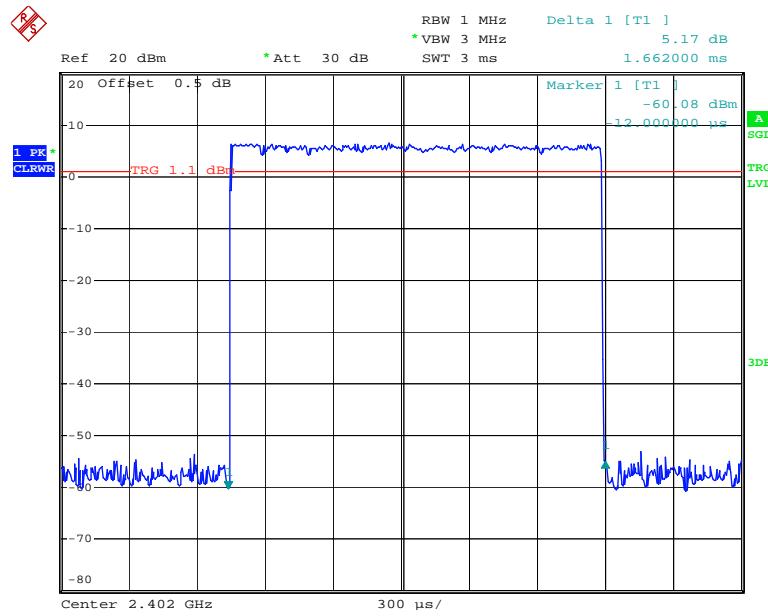
Date: 27.OCT.2017 23:30:20

2DH3: Middle Channel
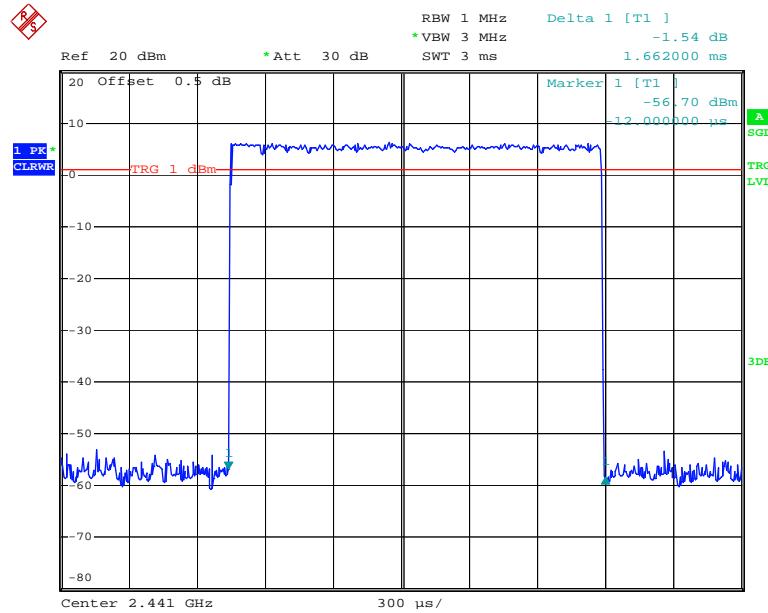
Date: 27.OCT.2017 23:30:56

2DH3: High Channel

```
                                        RBW 1 MHz    Delta 1 [T1 ]
                                       *VBW 3 MHz           -0.72 dB
        Ref  20 dBm         *Att  30 dB  SWT 3 ms       1.662000 ms
        20  Offset  0.5 dB                Marker 1 [T1 ]
                                                        -55.85 dBm
        10                                             12.000000 µs   A
                                                                      SGL
1 PK *
CLRWR
        0      TRG 1 dBm                                              TRG
                                                                     LVL
       -10

       -20

       -30

       -40                                                           3DB

       -50

       -60

       -70

       -80
        Center 2.48 GHz                      300 µs/
```
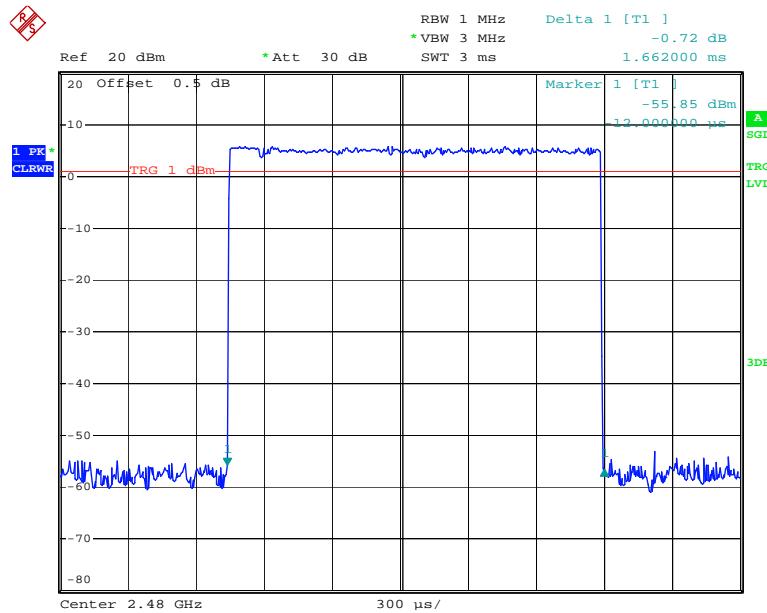
Date: 27.OCT.2017 23:31:05

2DH5: Low Channel

```
                                        RBW 1 MHz    Delta 1 [T1 ]
                                       *VBW 3 MHz           -1.61 dB
        Ref  20 dBm         *Att  30 dB  SWT 5 ms       2.920000 ms
        20  Offset  0.5 dB                Marker 1 [T1 ]
                                                        -56.56 dBm
        10                                             20.000000 µs   A
                                                                      SGL
1 PK *
CLRWR
        0      TRG 1.8 dBm                                            TRG
                                                                     LVL
       -10

       -20

       -30

       -40                                                           3DB

       -50

       -60

       -70

       -80
        Center 2.402 GHz                     500 µs/
```
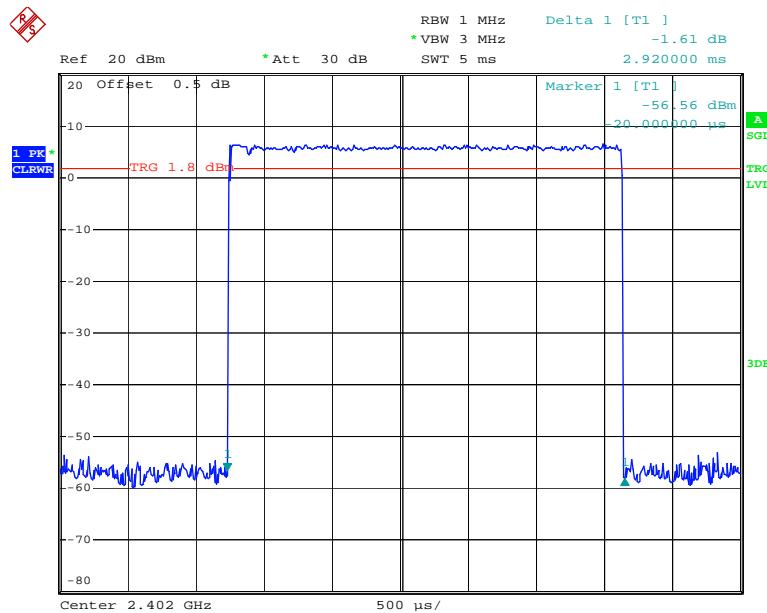
Date: 27.OCT.2017 23:31:30

2DH5: Middle Channel

		RBW 1 MHz	Delta 1 [T1]
		*VBW 3 MHz	-1.01 dB
Ref 20 dBm	*Att 30 dB	SWT 5 ms	2.920000 ms

```
20  Offset  0.5 dB                              Marker 1 [T1 ]
                                                      -56.13 dBm
10                                                    10.000000 µs
        TRG 2.7 dBm
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 2.441 GHz                    500 µs/
```
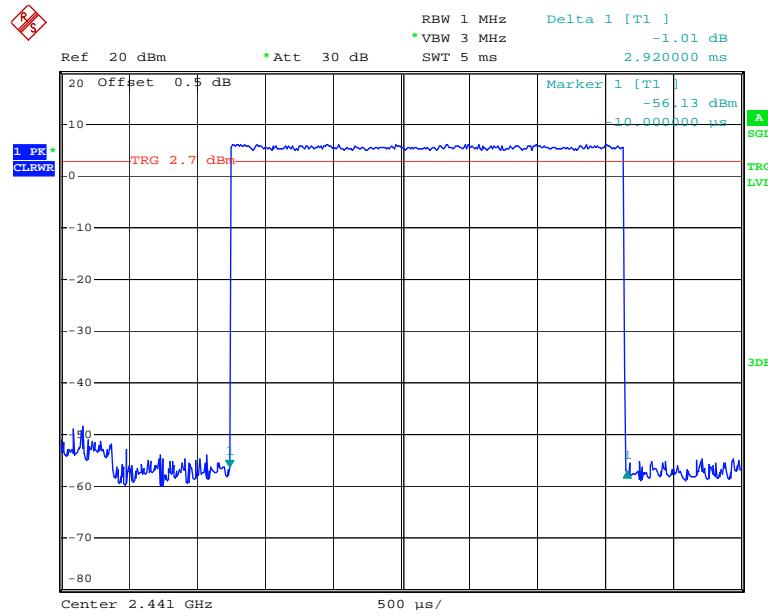
Date: 27.OCT.2017 23:31:38

2DH5: High Channel

		RBW 1 MHz	Delta 1 [T1]
		*VBW 3 MHz	-0.31 dB
Ref 20 dBm	*Att 30 dB	SWT 5 ms	2.920000 ms

```
20  Offset  0.5 dB                              Marker 1 [T1 ]
                                                      -56.49 dBm
10                                                    20.000000 µs
        TRG 1 dBm
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 2.48 GHz                     500 µs/
```
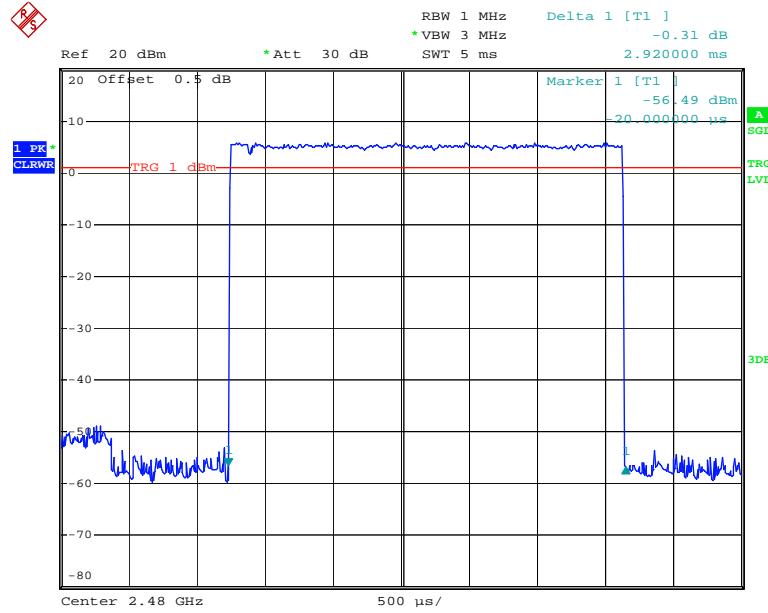
Date: 27.OCT.2017 23:31:46

EDR Mode (8-DPSK):

Mode	Channel	Pulse Width (ms)	Dwell Time (s)	Limit (s)	Result
3DH1	Low	0.396	0.127	0.4	Compliance
	Middle	0.398	0.127	0.4	Compliance
	High	0.398	0.127	0.4	Compliance
	Note: Dwell time=Pulse time (ms) × (1600/2/79) ×31.6 s				
3DH3	Low	1.662	0.266	0.4	Compliance
	Middle	1.662	0.266	0.4	Compliance
	High	1.662	0.266	0.4	Compliance
	Note: Dwell time=Pulse time (ms) × (1600/4/79) ×31.6 s				
3DH5	Low	2.920	0.311	0.4	Compliance
	Middle	2.920	0.311	0.4	Compliance
	High	2.920	0.311	0.4	Compliance
	Note: Dwell time=Pulse time (ms) × (1600/6/79) ×31.6 s				

3DH1: Low Channel
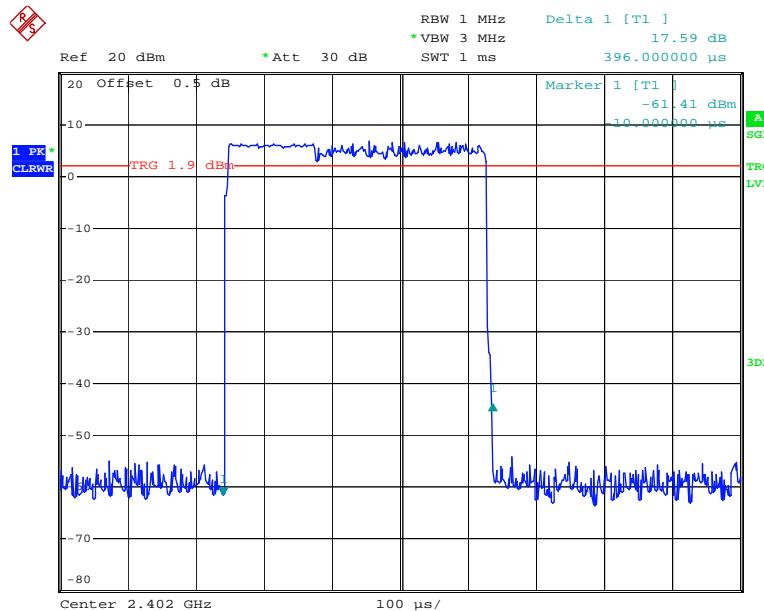
Date: 27.OCT.2017 23:32:12

3DH1: Middle Channel

```
                                      RBW 1 MHz     Delta 1 [T1 ]
                                     *VBW 3 MHz              2.94 dB
        Ref  20 dBm      *Att  30 dB  SWT 1 ms        398.000000 µs
        20  Offset  0.5 dB                      Marker 1 [T1 ]
                                                      -60.07 dBm
        10                                        10.000000 µs   A
                                                                 SGL
1 PK *
CLRWR   0     TRG 0.2 dBm                                         TRG
                                                                 LVL
       -10
       -20
                                                                 3DB
       -30
       -40
       -50
       -70
       -80
        Center 2.441 GHz                     100 µs/
```
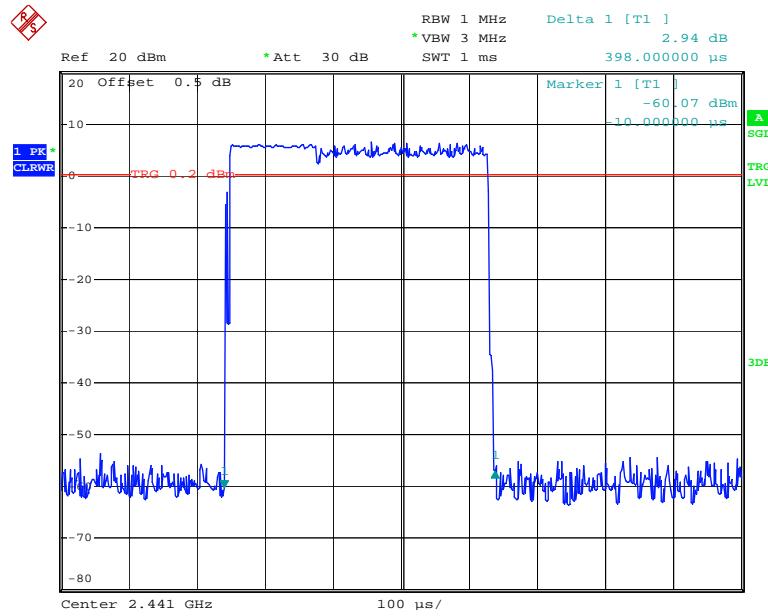
Date: 27.OCT.2017 23:32:20

3DH1: High Channel

```
                                      RBW 1 MHz     Delta 1 [T1 ]
                                     *VBW 3 MHz              2.10 dB
        Ref  20 dBm      *Att  30 dB  SWT 1 ms        398.000000 µs
        20  Offset  0.5 dB                      Marker 1 [T1 ]
                                                      -60.89 dBm
        10                                        10.000000 µs   A
                                                                 SGL
1 PK *
CLRWR   0     TRG 0.7 dBm                                         TRG
                                                                 LVL
       -10
       -20
       -30
                                                                 3DB
       -40
       -50
       -70
       -80
        Center 2.48 GHz                      100 µs/
```
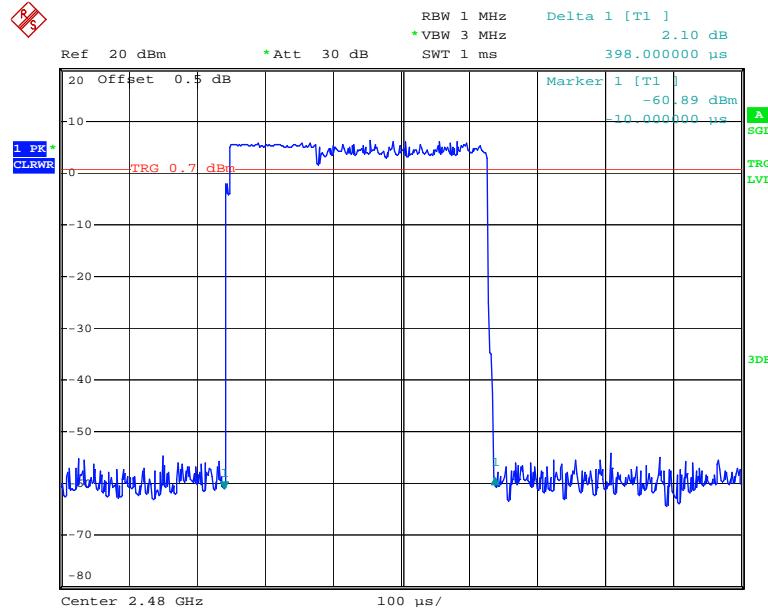
Date: 27.OCT.2017 23:32:29

3DH3: Low Channel
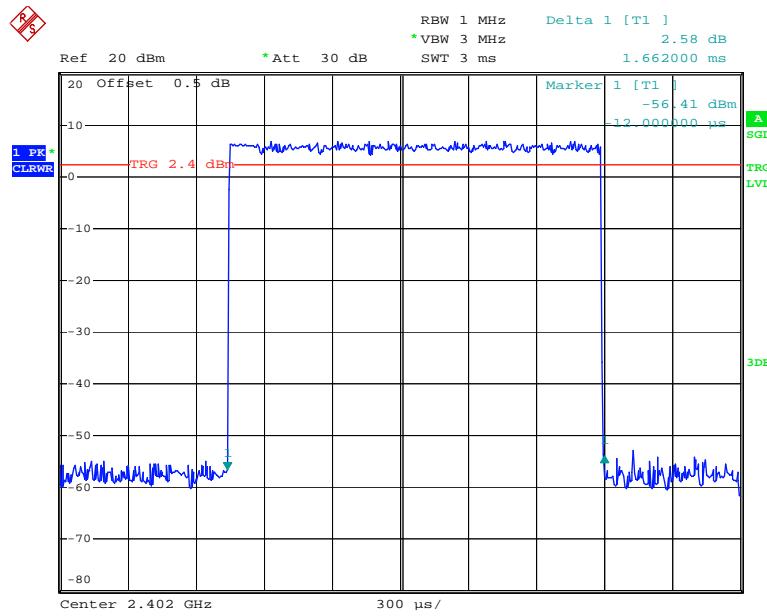
Date: 27.OCT.2017 23:32:55

3DH3: Middle Channel
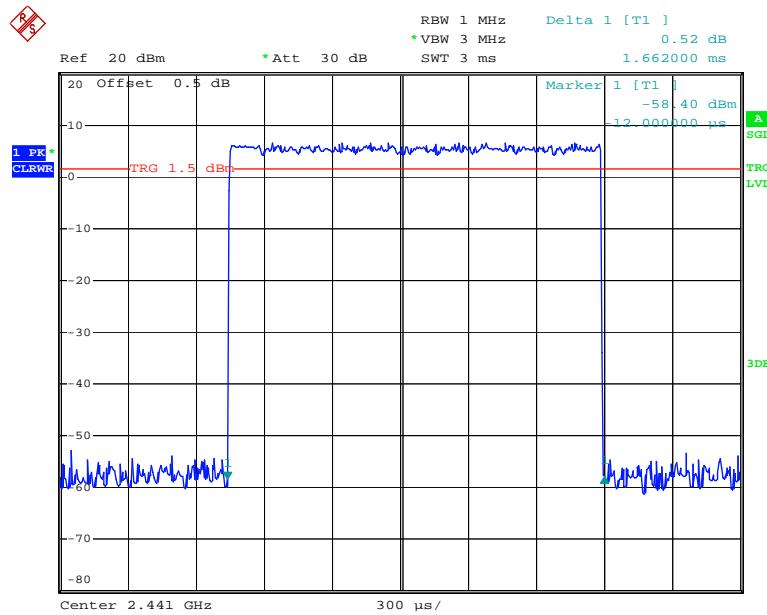
Date: 27.OCT.2017 23:33:03

3DH3: High Channel

RBW 1 MHz   Delta 1 [T1]
*VBW 3 MHz   2.18 dB
Ref 20 dBm   *Att 30 dB   SWT 3 ms   1.662000 ms
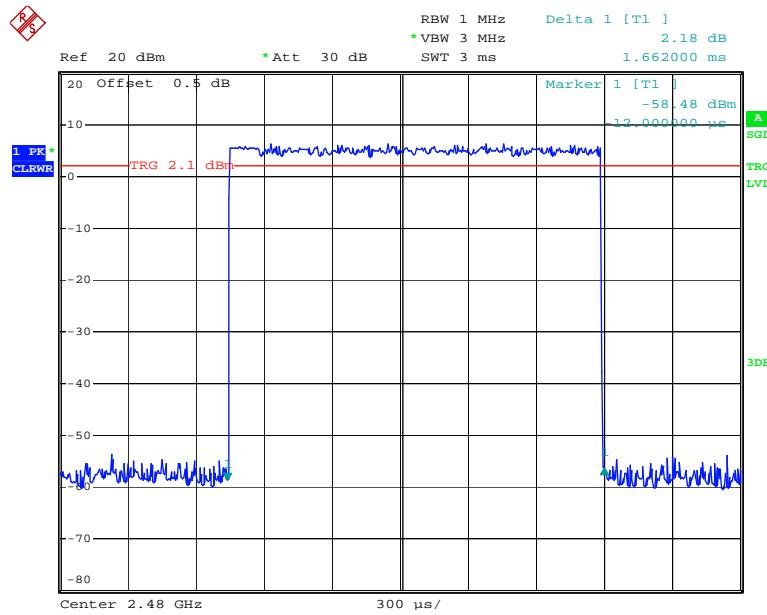
Date: 27.OCT.2017 23:33:12

3DH5: Low Channel

RBW 1 MHz   Delta 1 [T1]
*VBW 3 MHz   1.72 dB
Ref 20 dBm   *Att 30 dB   SWT 5 ms   2.920000 ms
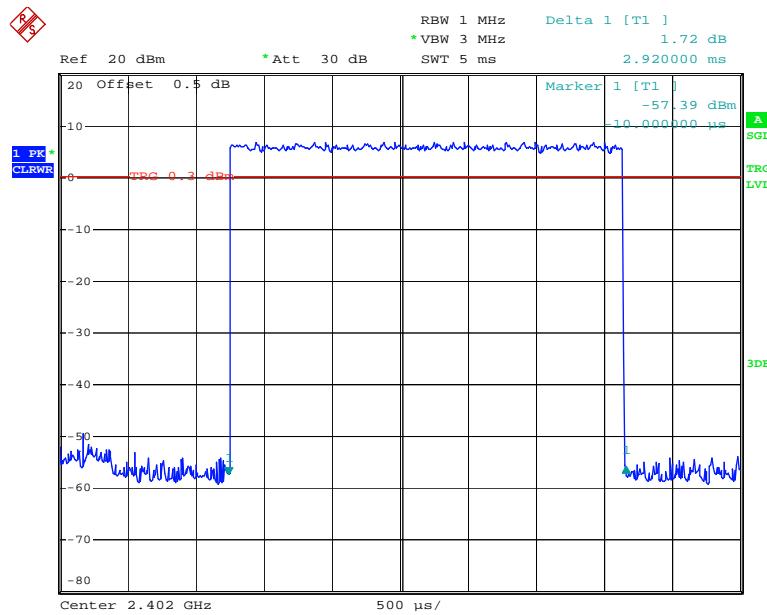
Date: 27.OCT.2017 23:33:38

3DH5: Middle Channel
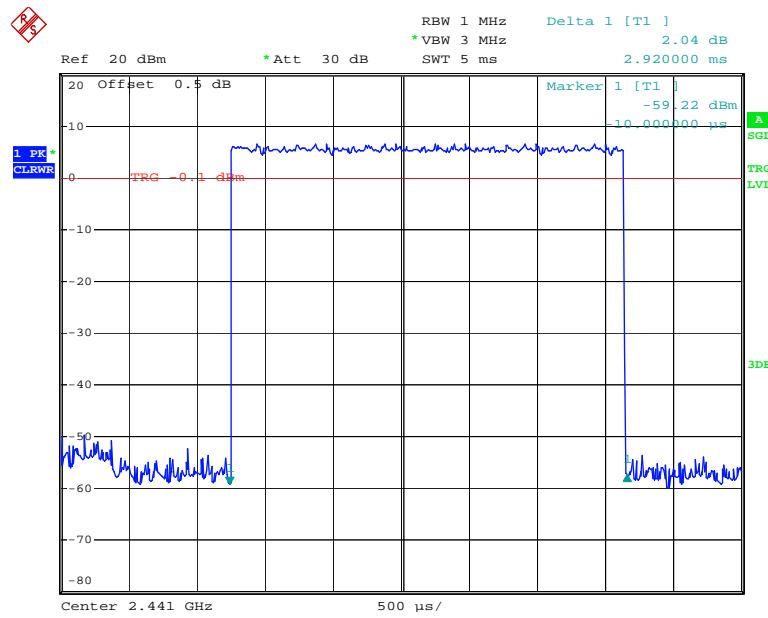
Date: 27.OCT.2017 23:33:47

3DH5: High Channel
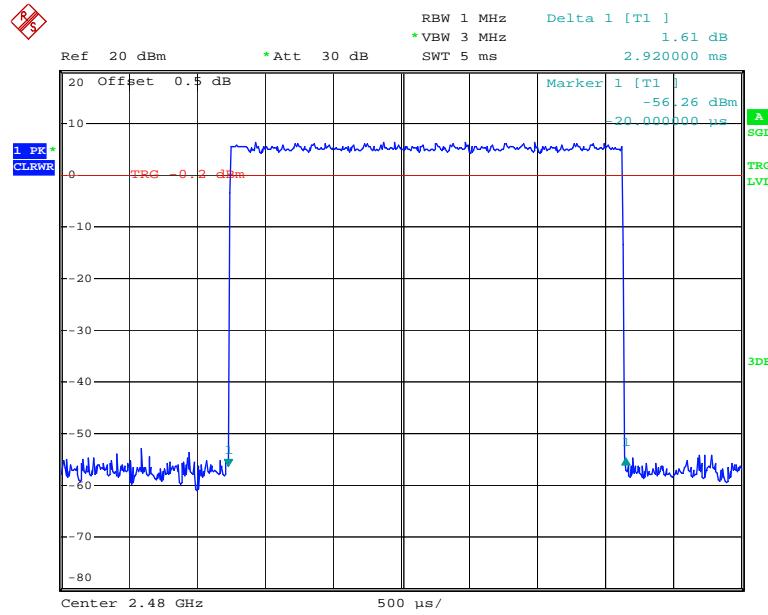
Date: 27.OCT.2017 23:33:55

FCC §15.247(b) (1) - PEAK OUTPUT POWER MEASUREMENT

Applicable Standard

According to §15.247(b) (1), for frequency hopping systems operating in the 2400–2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400–2483.5 MHz band: 0.125 watts

Test Procedure

1. Place the EUT on a bench and set in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to one test equipment.
3. Add a correction factor to the display.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2016-12-08	2017-12-08
Unknown	RF Cable	Unknown	C-2	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:	27.8 °C
Relative Humidity:	44 %
ATM Pressure:	101 kPa

* The testing was performed by Pean Zhu on 2017-10-27.

Test Result: Compliance.

Test Mode: Transmitting

Mode	Frequency (MHz)	Peak Conducted Output power (dBm)	Limit (dBm)
BDR Mode (GFSK)	2402	7.98	30
	2441	7.73	30
	2480	7.40	30
EDR Mode (π/4-DQPSK)	2402	6.94	30
	2441	6.78	30
	2480	6.45	30
EDR Mode (8-DPSK)	2402	7.55	30
	2441	7.27	30
	2480	6.91	30

Note: The data above was tested in conducted mode.

BDR Mode (GFSK):

Low Channel
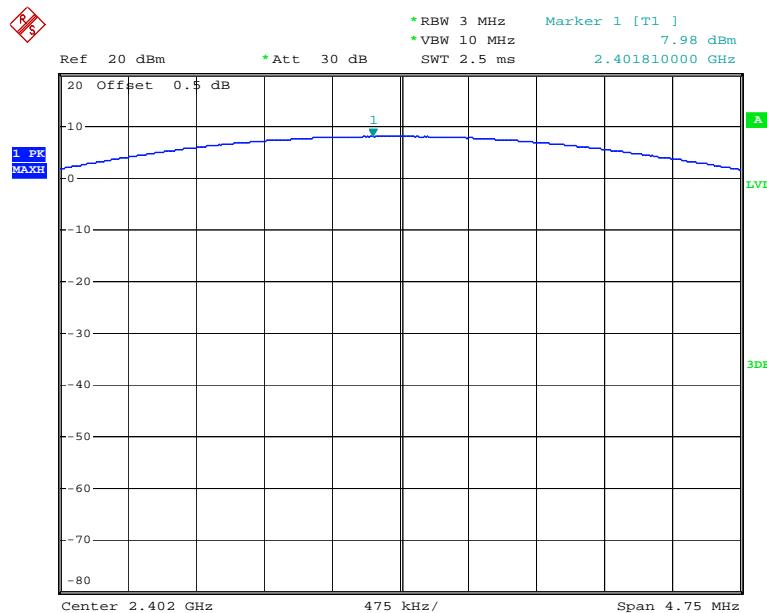
Date: 27.OCT.2017 22:37:12

Middle Channel

```
                                              *RBW 3 MHz     Marker 1 [T1 ]
                                              *VBW 10 MHz              7.73 dBm
              Ref  20 dBm         *Att  30 dB  SWT 2.5 ms      2.441047500 GHz
```



```
              Center 2.441 GHz              475 kHz/              Span 4.75 MHz
```
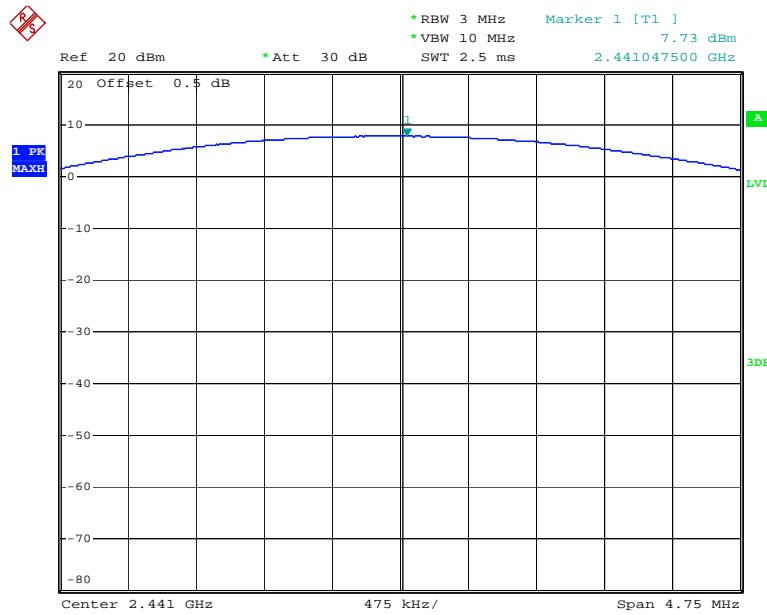
Date: 27.OCT.2017 22:45:44

High Channel

```
                                              *RBW 3 MHz     Marker 1 [T1 ]
                                              *VBW 10 MHz              7.40 dBm
              Ref  20 dBm         *Att  30 dB  SWT 2.5 ms      2.480047500 GHz
```



```
              Center 2.48 GHz               475 kHz/              Span 4.75 MHz
```
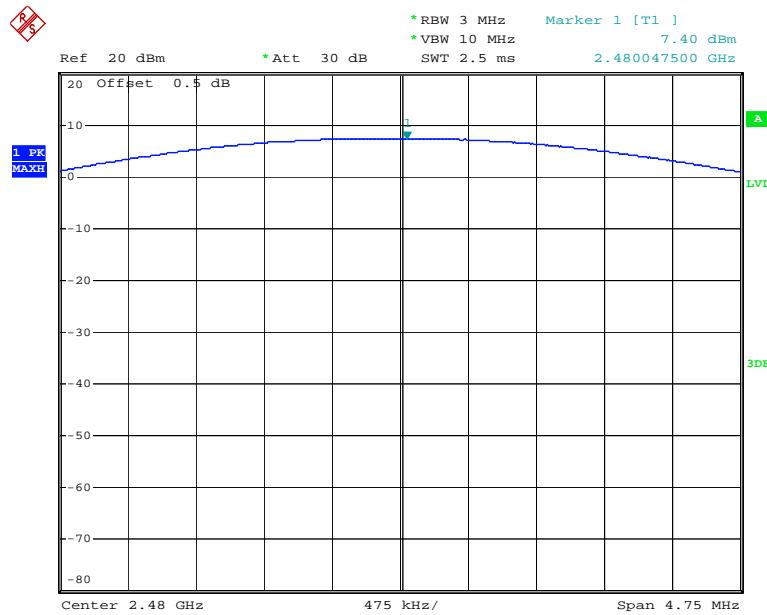
Date: 27.OCT.2017 22:46:55

EDR Mode (π/4-DQPSK):

Low Channel

```
R
S

                                    *RBW  3 MHz     Marker 1 [T1 ]
                                    *VBW 10 MHz              6.94 dBm
        Ref  20 dBm        *Att  30 dB    SWT 2.5 ms    2.401722800 GHz

        20 Offset  0.5 dB
                                                              A
        10

1 PK
MAXH     0                                                    LVL

       -10

       -20

       -30
                                                              3DB
       -40

       -50

       -60

       -70

       -80
        Center 2.402 GHz          630 kHz/           Span 6.3 MHz
```
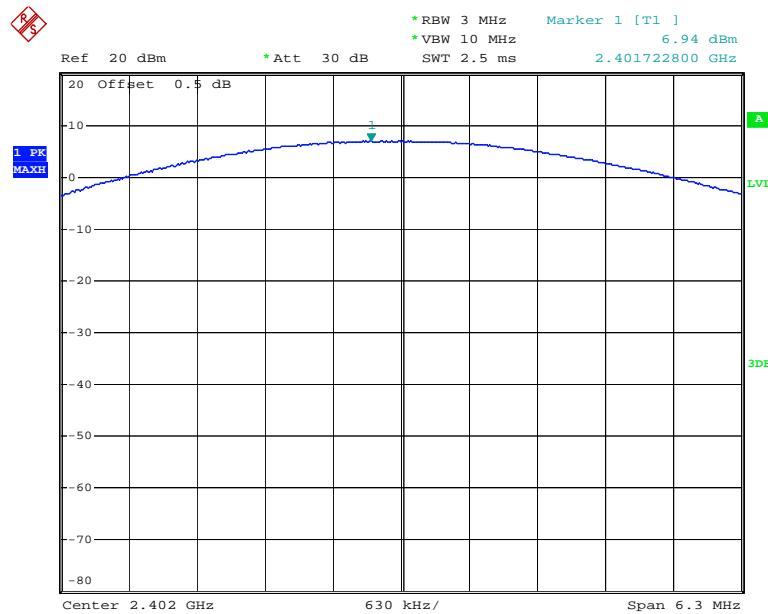
Date: 27.OCT.2017 22:53:07

Middle Channel

```
R
S

                                    *RBW  3 MHz     Marker 1 [T1 ]
                                    *VBW 10 MHz              6.78 dBm
        Ref  20 dBm        *Att  30 dB    SWT 2.5 ms    2.440822200 GHz

        20 Offset  0.5 dB
                                                              A
        10

1 PK
MAXH     0                                                    LVL

       -10

       -20

       -30

       -40                                                    3DB

       -50

       -60

       -70

       -80
        Center 2.441 GHz          635 kHz/           Span 6.35 MHz
```
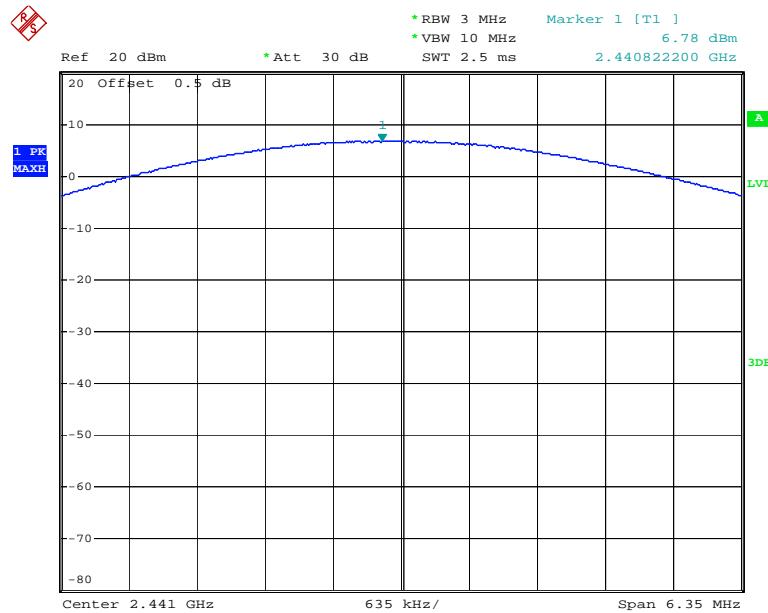
Date: 27.OCT.2017 22:51:47

High Channel


```
                                    *RBW 3 MHz     Marker 1 [T1 ]
                                    *VBW 10 MHz                6.45 dBm
        Ref  20 dBm       *Att  30 dB     SWT 2.5 ms      2.479785800 GHz
```
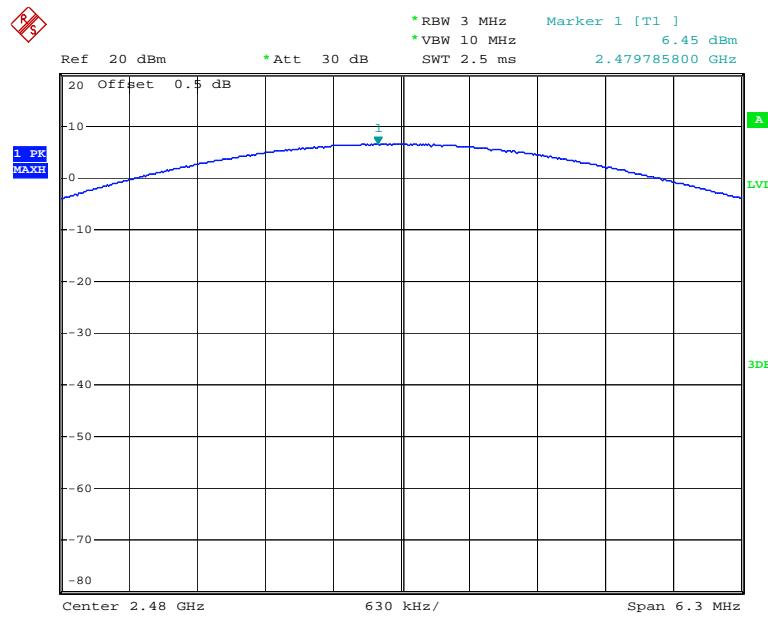
Date: 27.OCT.2017 22:50:07

EDR Mode (8-DPSK):

Low Channel


```
                                    *RBW 3 MHz     Marker 1 [T1 ]
                                    *VBW 10 MHz                7.55 dBm
        Ref  20 dBm       *Att  30 dB     SWT 2.5 ms      2.401911100 GHz
```
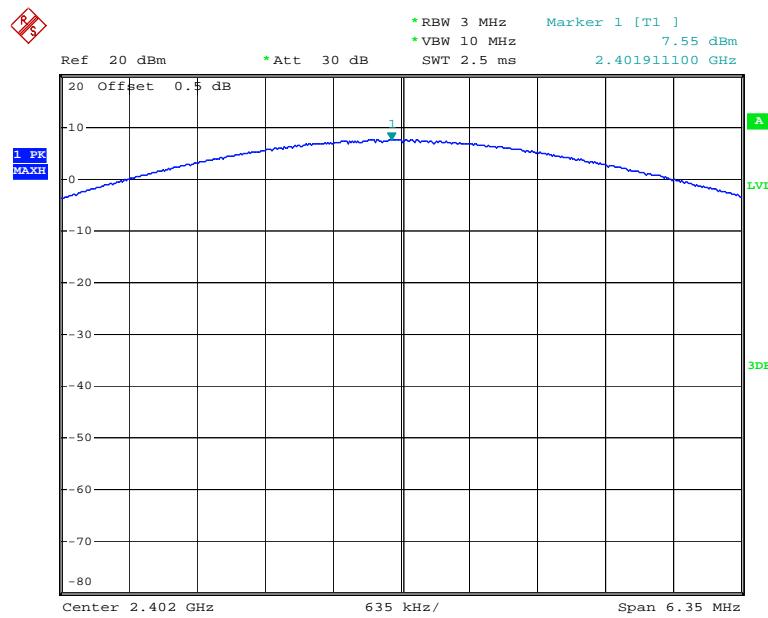
Date: 27.OCT.2017 22:55:07

Middle Channel

```
                                        *RBW 3 MHz    Marker 1 [T1 ]
                                        *VBW 10 MHz              7.27 dBm
        Ref  20 dBm          *Att  30 dB  SWT 2.5 ms    2.440949200 GHz
```



```
        Center 2.441 GHz              635 kHz/             Span 6.35 MHz
```
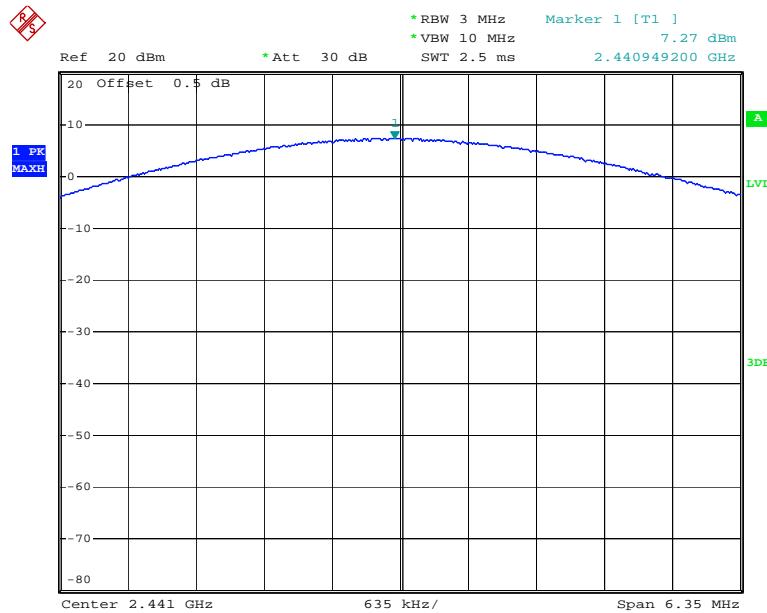
Date: 27.OCT.2017 22:56:45

High Channel

```
                                        *RBW 3 MHz    Marker 1 [T1 ]
                                        *VBW 10 MHz              6.91 dBm
        Ref  20 dBm          *Att  30 dB  SWT 2.5 ms    2.479874000 GHz
```



```
        Center 2.48 GHz               630 kHz/             Span 6.3 MHz
```
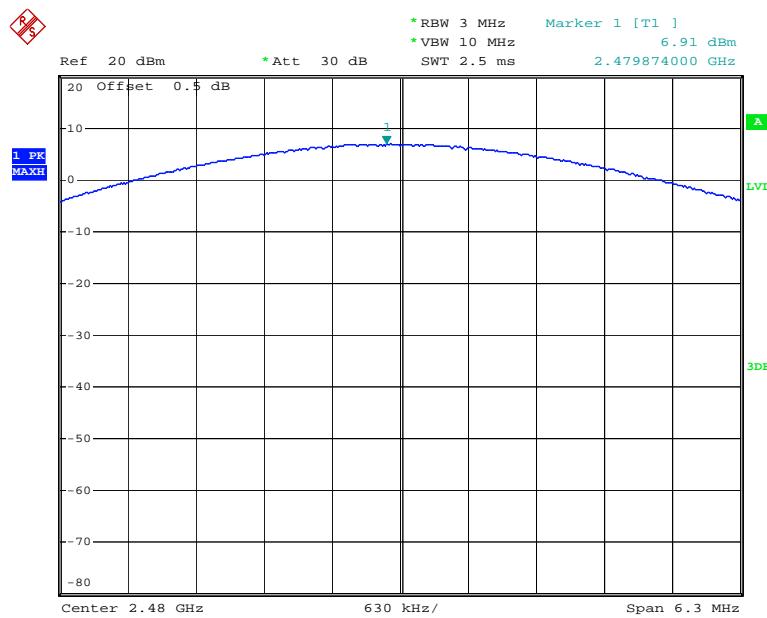
Date: 27.OCT.2017 22:57:47

FCC §15.247(d) - BAND EDGES TESTING

Applicable Standard

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Remove the antenna from the EUT and then connect to a low loss RF cable from the antenna port to a EMI test receiver, then turn on the EUT and make it operate in transmitting mode. Then set it to Low Channel and High Channel within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW/ VBW of spectrum analyzer to 100/300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2016-12-08	2017-12-08
Unknown	RF Cable	Unknown	C-2	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:	27.8 °C
Relative Humidity:	44 %
ATM Pressure:	101 kPa

* The testing was performed by Pean Zhu on 2017-10-27.

Test Result: Compliance

*BDR Mode (GFSK):*

Band Edge, Left Side
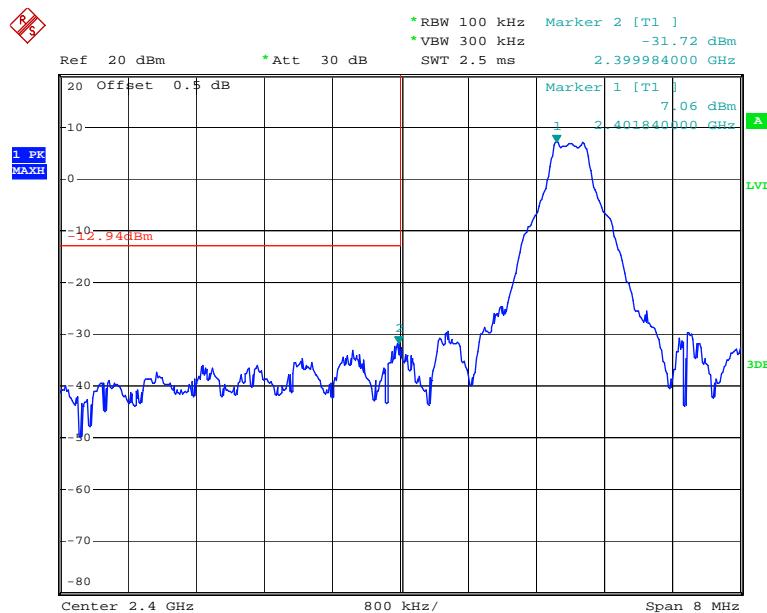
Date: 27.OCT.2017 22:37:36

Band Edge, Right Side
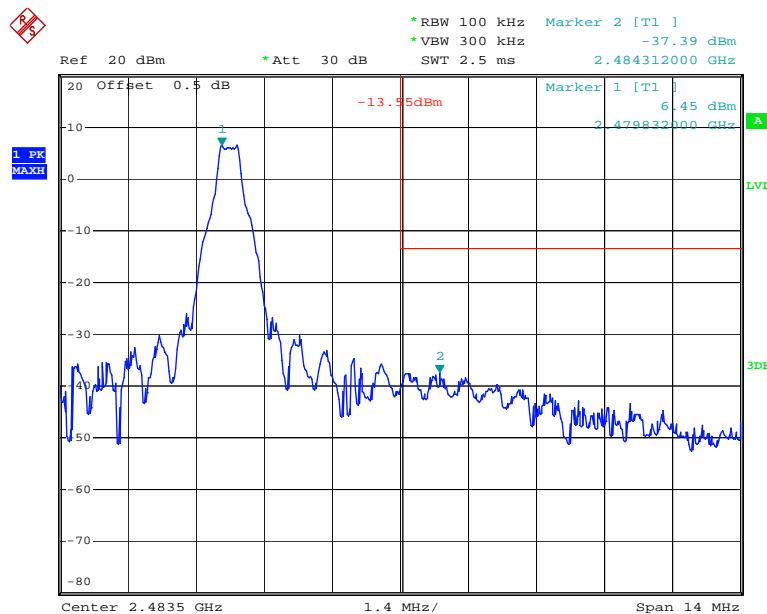
Date: 27.OCT.2017 22:47:13

EDR Mode (π/4-DQPSK):

Band Edge, Left Side
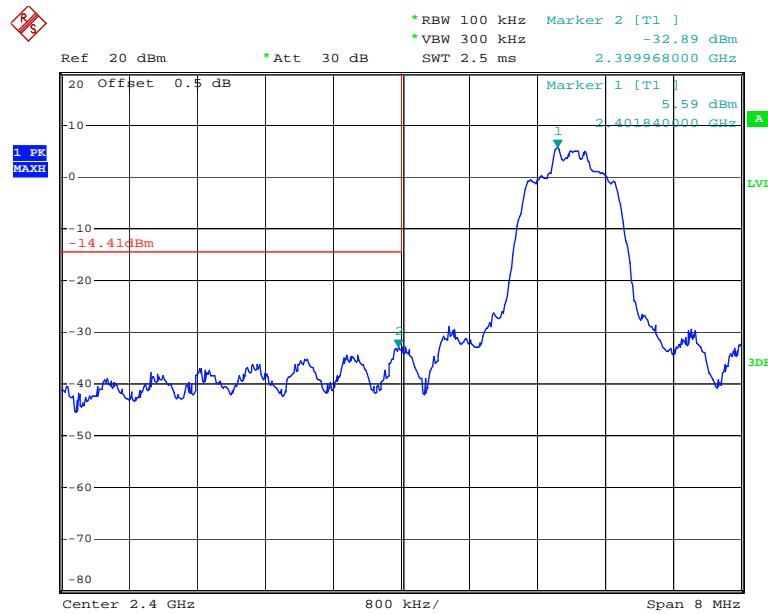

Date: 27.OCT.2017　22:53:43

Band Edge, Right Side
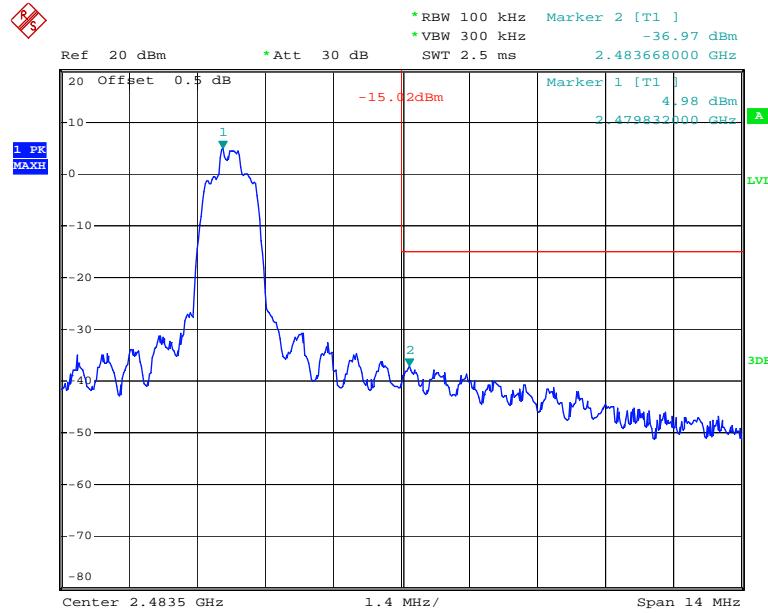

Date: 27.OCT.2017　22:50:37

EDR Mode (8-DPSK):

Band Edge, Left Side

```
                                    *RBW  100 kHz   Marker 2 [T1 ]
                                    *VBW  300 kHz            -32.01 dBm
          Ref  20 dBm      *Att  30 dB   SWT 2.5 ms     2.399968000 GHz
       20 Offset  0.5 dB                   Marker 1 [T1 ]
                                                          5.63 dBm
     -10                                                2.401840000 GHz
   1 PK
   MAXH                                      1
      0
     -10
   -14.37dBm
     -20
     -30
     -40
     -50
     -60
     -70
     -80
          Center 2.4 GHz          800 kHz/              Span 8 MHz
```
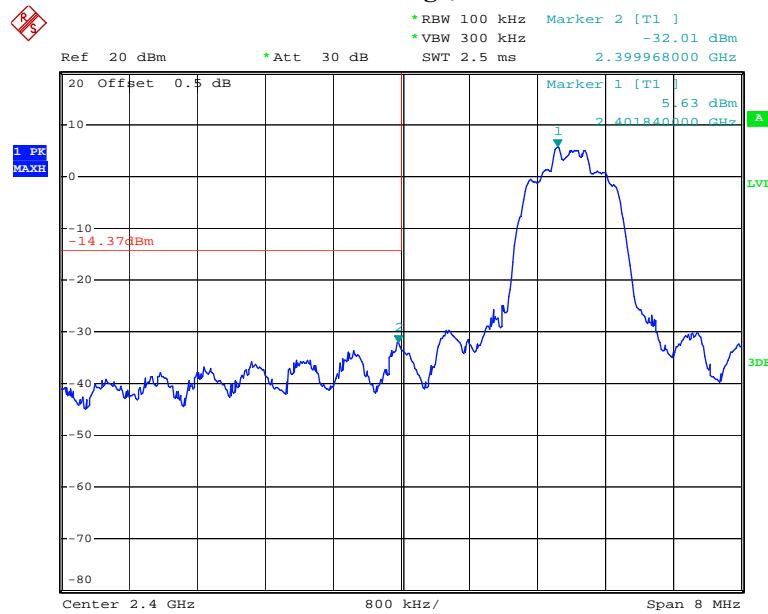
Date: 27.OCT.2017 22:55:42

Band Edge, Right Side

```
                                    *RBW  100 kHz   Marker 2 [T1 ]
                                    *VBW  300 kHz            -36.99 dBm
          Ref  20 dBm      *Att  30 dB   SWT 2.5 ms     2.483668000 GHz
       20 Offset  0.5 dB               Marker 1 [T1 ]
                          -15.04dBm                       4.96 dBm
     -10                                                2.479832000 GHz
   1 PK
   MAXH       1
      0
     -10
     -20
     -30
     -40
     -50
     -60
     -70
     -80
          Center 2.4835 GHz       1.4 MHz/              Span 14 MHz
```
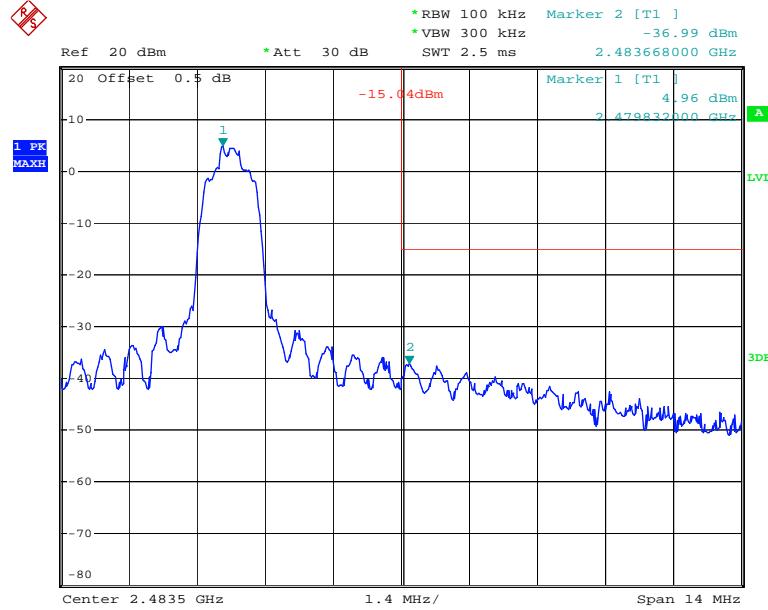
Date: 27.OCT.2017 22:58:17

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