FCC PART 15.249

TEST REPORT

For

invoxia

2 rue Maurice Hartman, Issy-Les-Moulineaux, France

FCC ID: ZVS-LWT1

Report Type:	Product Type:
Original Report	LWT

Report Number: RSZ170811003-00C

Report Date: 2018-01-24

Reviewed By: Rocky Kang, RF Engineer

Prepared By:

Bay Area Compliance Laboratories Corp. (Shenzhen)
6/F., West Wing, Third Phase of Wanli Industrial Building, Shihua Road, Futian Free Trade Zone, Shenzhen, Guangdong, China
Tel: +86-755-33320018
Fax: +86-755-33320008
www.baclcorp.com.cn

TABLE OF CONTENTS

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *invoxia's* product, model number: *LWT1 (FCC ID: ZVS-LWT1)* or the "EUT" in this report was a *LWT with Wi-Fi, BLE, GPS and LoRa function,* which was measured approximately: 11 cm (L) × 2.8 cm (W) ×0.9 cm (H), rated with input voltage: DC 3.7V from battery.

**All measurement and test data in this report was gathered from production sample serial number: 1701906 (Assigned by applicant).The EUT supplied by the applicant was received on 2017-07-11.*

Objective

This report is prepared on behalf of *invoxia* in accordance with Part 2-Subpart J, and Part 15-Subparts A and C of the Federal Communication Commissions rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.209, 15.215 and 15.249 rules.

Related Submittal(s)/Grant(s)

FCC Part 15.247 DTS submissions with FCC ID: ZVS-LWT1.

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.

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Measurement Uncertainty

Parameter	Uncertainty
Occupied Channel Bandwidth	±5%
RF conducted test with spectrum	±1.5dB
AC Power Lines Conducted Emissions	±1.95dB
All emissions, radiated	±4.88dB
Temperature	±3℃
Humidity	±6%
Supply voltages	±0.4%

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 6/F., West Wing, Third Phase of Wanli Industrial Building, Shihua Road, Futian Free Trade Zone, Shenzhen, Guangdong, China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No.: 382179, the FCC Designation No.: CN5001.

The test site has been registered with ISED Canada under ISED Canada Registration Number 3062B.

SYSTEM TEST CONFIGURATION

Justification

The system was configured for testing in engineering mode.

Description of Channel List

For LoRa 125 kHz BW, 121 channels was used, starting at 903.0 MHz ending at 927.0 MHz and channel frequency= 903MHz + n* 200 kHz.

For LoRa 250 kHz BW , 61 channels was used, starting at 903.0 MHz ending at 927.0 MHz. and channel frequency= 903MHz + n* 400 kHz.

For LoRa 500 kHz BW, 41 channels was used, starting at 903.0 MHz ending at 927.0 MHz and channel frequency= 903MHz + n* 600 kHz.

EUT Exercise Software

No software was used.

Equipment Modifications

No modifications were made to the unit tested.

Support Equipment List and Details

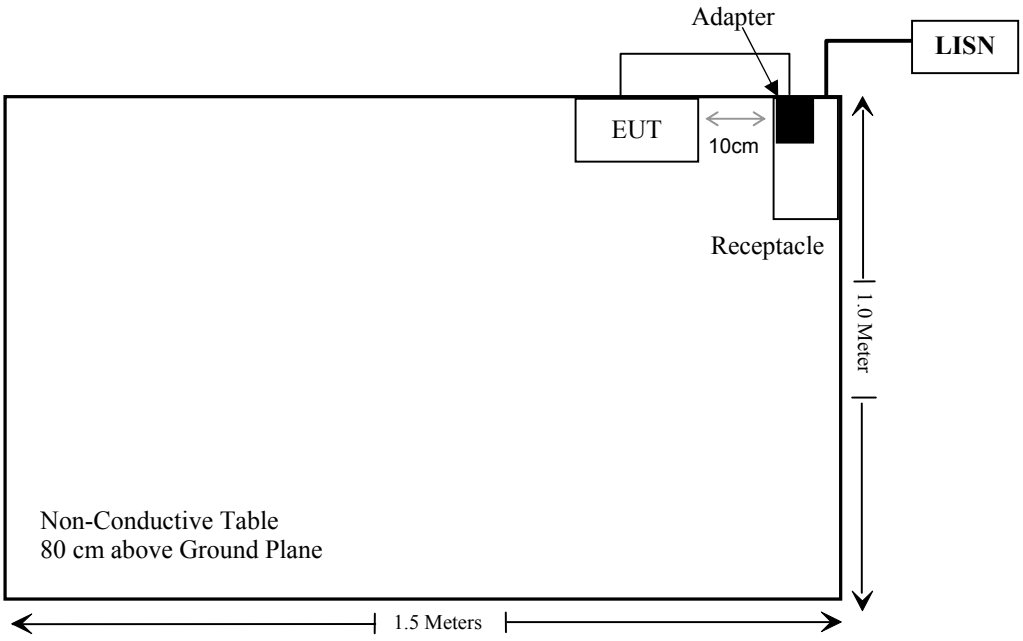
Manufacturer	Description	Model	Serial Number
SUMSUNG	Adapter	ETA0U80EBE	SC1C314FS/A-E

External I/O Cable

Cable Description	Length (m)	From Port	To
Un-shielding Un-detachable USB Cable	0.1	EUT	Adapter

Block Diagram of Test Setup

For conducted emission



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.203	Antenna Requirement	Compliance
§15.207(a)	Conduction Emissions	Compliance
15.205, §15.209, §15.249	Radiated Emissions	Compliance
§15.215 (c)	20 dB Bandwidth	Compliance

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiation test					
HP	Amplifier	HP8447E	1937A01046	2017-05-21	2017-11-19
HP	Amplifier	HP8447E	1937A01046	2017-11-21	2018-05-21
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2016-11-25	2017-11-25
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2017-11-25	2018-11-25
Sunol Sciences	Broadband Antenna	JB3	A090314-2	2016-01-09	2019-01-08
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2017-02-14	2018-02-14
Rohde & Schwarz	Signal Analyzer	FSIQ26	100048	2016-11-25	2017-11-25
ETS	Horn Antenna	3115	6229	2016-01-11	2019-01-10
R&S	Auto test Software	EMC32	V 09.10.0	NCR	NCR
Ducommun technologies	RF Cable	UFA210A-1-4724-30050U	MFR64369 223410-001	2017-05-21	2017-11-19
Ducommun technologies	RF Cable	UFA210A-1-4724-30050U	MFR64369 223410-001	2017-11-21	2018-05-21
Ducommun technologies	RF Cable	104PEA	218124002	2017-05-21	2017-11-19
Ducommun technologies	RF Cable	104PEA	218124002	2017-11-21	2018-05-21
Ducommun technologies	RF Cable	RG-214	1	2017-05-21	2017-11-19
Ducommun technologies	RF Cable	RG-214	2	2017-05-22	2017-11-22
Conducted Emissions Test					
Rohde & Schwarz	EMI Test Receiver	ESCS30	100176	2016-10-19	2017-10-19
Rohde & Schwarz	LISN	ENV216	3560.6650.12-101613-Yb	2016-12-07	2017-12-07
Rohde & Schwarz	Transient Limiter	ESH3Z2	DE25985	2017-05-21	2017-11-19
Rohde & Schwarz	CE Test software	EMC 32	V8.53.0	NCR	NCR
N/A	Conducted Emission Cable	N/A	UF A210B-1-0720-504504	2017-05-12	2017-11-12

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

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 user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

a. Antenna must be permanently attached to the unit.
b. Antenna must use a unique type of connector to attach to the EUT.

Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

Antenna Connector Construction

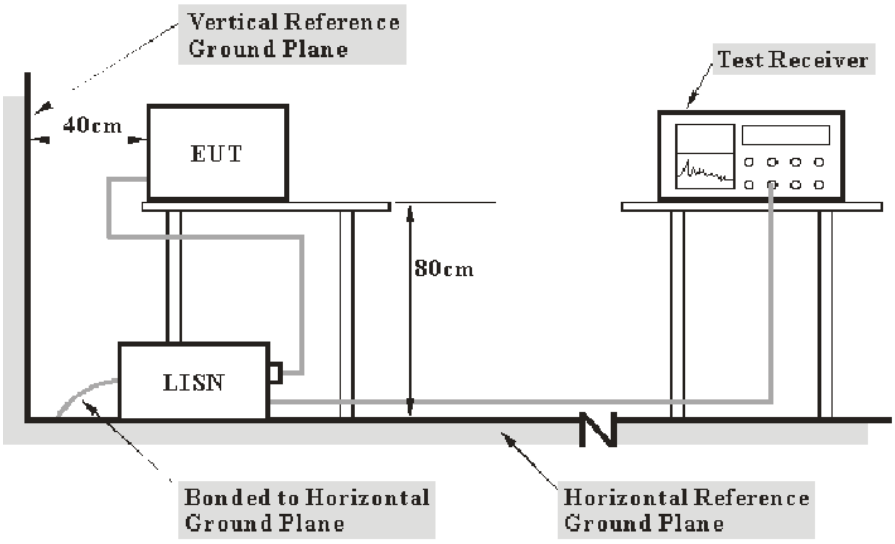
The EUT has one chip antenna for test, which was permanently attached and the antenna gain is 2.15 dBi, fulfill the requirement of this section. Please refer to the EUT photos.

FCC §15.207 – AC LINE CONDUCTED EMISSIONS

Applicable Standard

According to FCC §15.207

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 measurement procedure of EUT setup is according with per ANSI C63.10-2013. The related limit was specified in FCC Part 15.207.

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

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

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

Corrected Factor & Margin Calculation

The Corrected factor is calculated by adding LISN/ISN VDF (Voltage Division Factor), Cable Loss and Transient Limiter Attenuation. The basic equation is as follows:

Correction Factor = LISN VDF + Cable Loss + Transient Limiter Attenuation

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

Margin = Limit – Corrected Amplitude

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.207,

Refer to CISPR16-4-2:2011 and CISPR 16-4-1:2009, the measured level is in compliance with the limit if

$$L_m + U_{(Lm)} \leq L_{lim} + U_{cispr}$$

In BACL., $U_{(Lm)}$ is less than U_{cispr}, if L_m is less than L_{lim}, it implies that the EUT complies with the limit.

Test Data

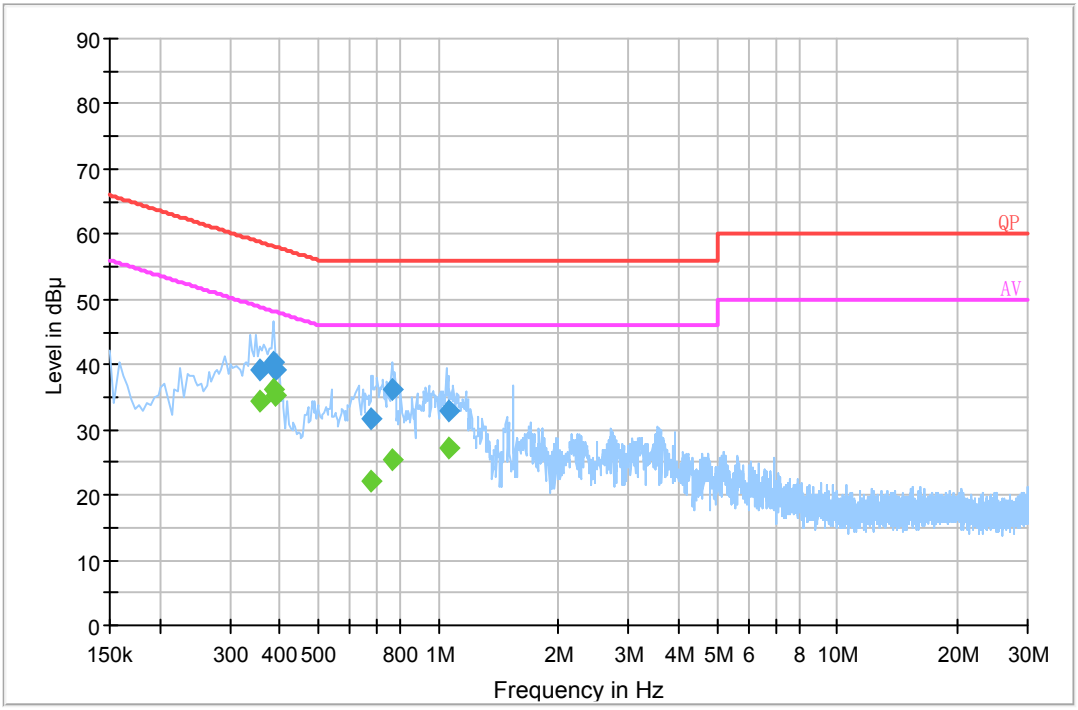
Environmental Conditions

Temperature:	22 ℃
Relative Humidity:	51 %
ATM Pressure:	101.0 kPa

The testing was performed by Kobe Li on 2017-09-20.

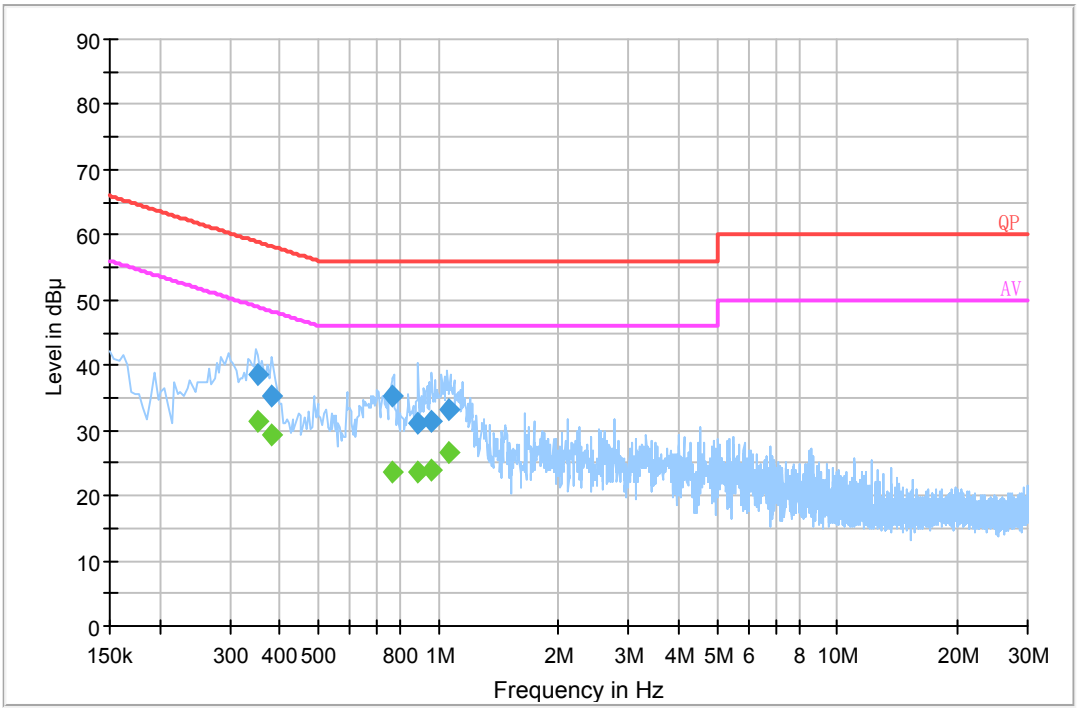
EUT Operation Mode: Transmitting (Pre-scan in mode 125 kHz, 250 kHz and 500 kHz, the worst case is in mode 500 kHz)

AC 120V/60 Hz, Line



Frequency (MHz)	Corrected Amplitude (dBµV)	Corrected Factor (dB)	Limit (dBµV)	Margin (dB)	Remark (PK/QP/Ave.)
0.355250	39.2	20.2	58.8	19.6	QP
0.384210	40.3	20.2	58.2	17.9	QP
0.388090	39.2	20.2	58.1	18.9	QP
0.679830	31.7	20.0	56.0	24.3	QP
0.770450	36.3	20.0	56.0	19.7	QP
1.058310	33.0	20.1	56.0	23.0	QP
0.355250	34.4	20.2	48.8	14.4	Ave.
0.384210	36.3	20.2	48.2	11.9	Ave.
0.388090	35.3	20.2	48.1	12.8	Ave.
0.679830	22.0	20.0	46.0	24.0	Ave.
0.770450	25.4	20.0	46.0	20.6	Ave.
1.058310	27.2	20.1	46.0	18.8	Ave.

AC 120V/60 Hz, Neutral



Frequency (MHz)	Corrected Amplitude (dBµV)	Correction Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK/Ave./QP)
0.352750	38.5	20.2	58.9	20.4	QP
0.380270	35.4	20.2	58.3	22.9	QP
0.770390	35.1	20.0	56.0	20.9	QP
0.884650	31.1	20.1	56.0	24.9	QP
0.959570	31.4	20.1	56.0	24.6	QP
1.058190	33.3	20.1	56.0	22.7	QP
0.352750	31.3	20.2	48.9	17.6	Ave.
0.380270	29.4	20.2	48.3	18.9	Ave.
0.770390	23.6	20.0	46.0	22.4	Ave.
0.884650	23.7	20.1	46.0	22.3	Ave.
0.959570	23.9	20.1	46.0	22.1	Ave.
1.058190	26.6	20.1	46.0	19.4	Ave.

Note:
1) Correction Factor =LISN VDF (Voltage Division Factor) + Cable Loss + Transient Limiter Attenuation
The corrected factor has been input into the transducer of the test software.
2) Corrected Amplitude = Reading + Correction Factor
3) Margin = Limit – Corrected Amplitude

FCC§15.205, §15.209 & §15.249 - RADIATED EMISSIONS

Applicable Standard

As per FCC§15.249 (a), except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902–928 MHz	50	500
2400–2483.5 MHz	50	500
5725–5875 MHz	50	500
24.0–24.25 GHz	250	2500

As per FCC§15.249 (c), Field strength limits are specified at a distance of 3 meters.

Test Equipment Setup

The spectrum analyzer or receiver is set as:

Below 1000MHz:

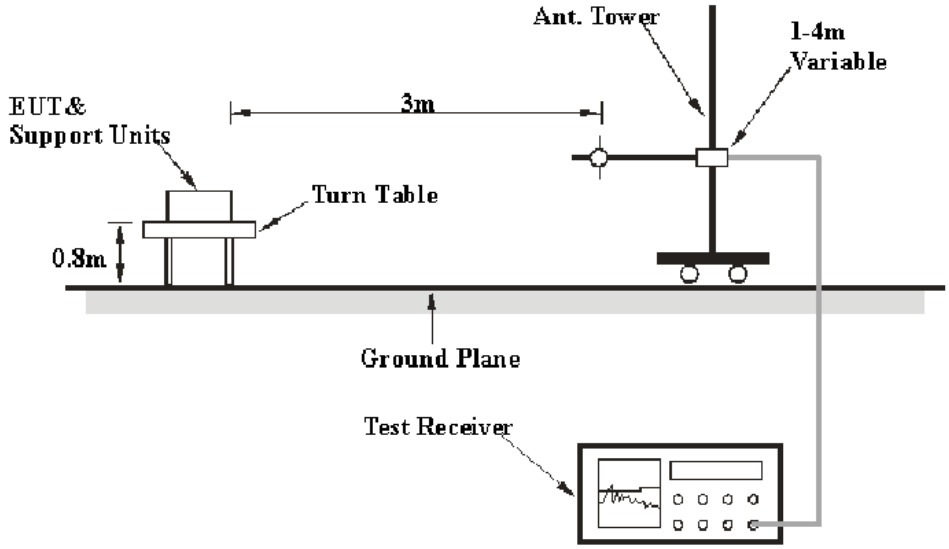
RBW = 100 kHz / VBW = 300 kHz / Sweep = Auto

Above 1000MHz:

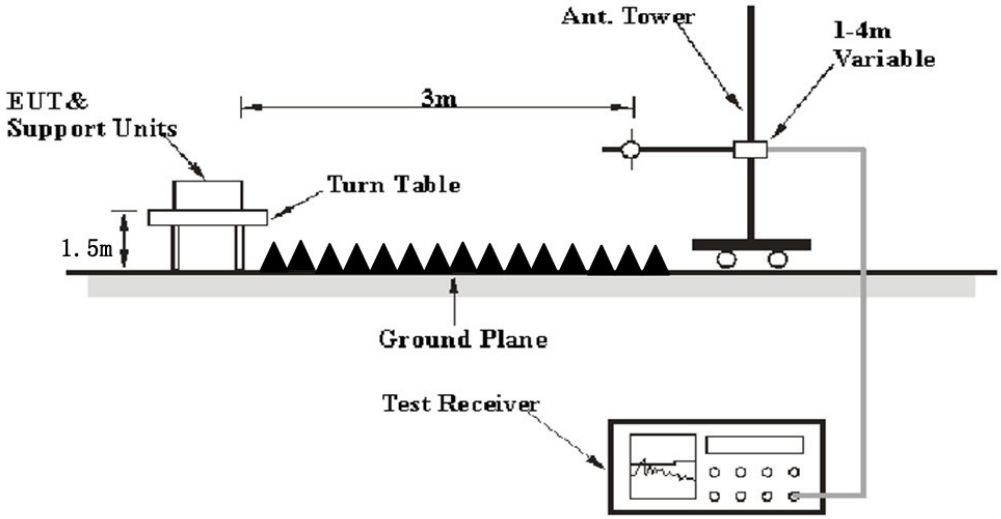
Peak: RBW = 1MHz / VBW = 1MHz / Sweep = Auto
Average: RBW = 1MHz / VBW = 10Hz / Sweep = Auto

EUT Setup

Below 1G:



Above 1GHz:



The radiated emission and out of band 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 part 15.209, 15.205 and FCC part 15.249 limits.

Test Procedure

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

The EUT is set 3 meter away from the testing antenna, which is varied from 1-4 meter, and the EUT is placed on a turntable, which is 0.8 meter above ground plane for below 1GHz and 1.5 meter above ground plane for above 1GHz, the table shall be rotated for 360 degrees to find out the highest emission. The receiving antenna should be changed the polarization both of horizontal and vertical.

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 Results Summary

According to the data in the following table, the EUT complied with the FCC Part 15.205, 15.209 & §15.249

Refer to CISPR16-4-2:2011 and CISPR 16-4-1:2009, the measured level complies with the limit if

$$L_m + U_{(Lm)} \leq L_{lim} + U_{cispr}$$

In BACL, $U_{(Lm)}$ is less than U_{cispr}, if L_m is less than L_{lim}, it implies that the EUT complies with the limit.

Test Data

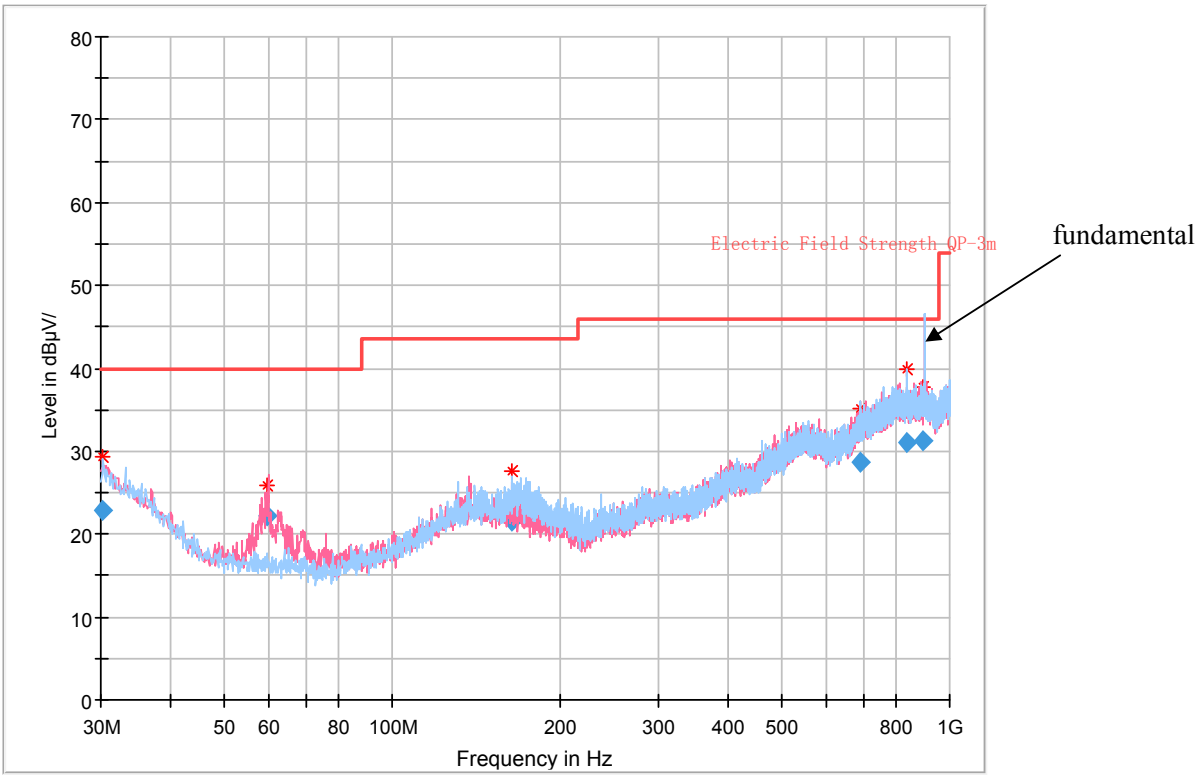
Environmental Conditions

Temperature:	22 ℃
Relative Humidity:	51 %
ATM Pressure:	101.0 kPa

The testing was performed by Kobe Li on 2017-08-15

EUT operation mode: Transmitting

30 MHz~1 GHz: (worst case was BLE and LoRa 500kHz mode transmitting simultaneously)



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna height (cm)	Antenna Polarity	Turntable position (degree)	Correction Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
30.158802	22.79	334.0	H	60.0	0.2	40.00	17.21
59.559625	22.27	104.0	V	166.0	-11.8	40.00	17.73
164.440625	21.57	225.0	H	301.0	-5.4	43.50	21.93
692.034750	28.76	253.0	H	355.0	6.3	46.00	17.24
836.578625	31.11	139.0	H	91.0	9.0	46.00	14.89
891.982250	31.18	164.0	V	279.0	9.6	46.00	14.82

Fundamental and band edge:

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	FCC Part 15.249/15.205/15.209	
	Reading (dBμV)	PK/QP/Ave.		Height (m)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
125 kHz BW									
902.00	30.48	QP	108	2.0	H	9.64	40.12	46	5.88
903.00	82.65	QP	281	1.4	H	9.61	92.26	94	1.74
915.00	83.41	QP	93	1.6	H	9.24	92.65	94	1.35
927.00	83.66	QP	326	1.4	H	8.88	92.54	94	1.46
928.00	31.69	QP	60	2	H	8.85	40.54	46	5.46
250 kHz BW									
902	29.81	QP	108	2.6	H	9.64	39.45	46	6.55
903	81.64	QP	280	1.5	H	9.61	91.25	94	2.75
915	83.31	QP	93	1.6	H	9.24	92.55	94	1.45
927	84.01	QP	326	1.4	H	8.88	92.89	94	1.11
928	30.14	QP	66	2.5	H	8.85	38.99	46	7.01
500 kHz BW									
902	30.01	QP	16	2	H	9.64	39.65	46	6.35
903	81.95	QP	281	1.6	H	9.61	91.56	94	2.44
915	83.74	QP	93	1.6	H	9.24	92.98	94	1.02
927	84.66	QP	325	1.4	H	8.88	93.54	94	0.46
928	30.69	QP	66	2	H	8.85	39.54	46	6.46

1 GHz~10 GHz:
125 kHz

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	FCC Part 15.249/15.205/15.209	
	Reading (dBμV)	PK/QP/Ave.		Height (m)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
Low Channel									
1806.00	52.56	PK	203	2.0	H	-4.87	47.69	74	26.31
1806.00	50.18	Ave.	203	2.0	H	-4.87	45.31	54	8.69
2709.00	44.49	PK	324	1.8	H	-0.01	44.48	74	29.52
2709.00	34.74	Ave.	324	1.8	H	-0.01	34.73	54	19.27
3612.00	43.25	PK	184	1.7	H	2.01	45.26	74	28.74
3612.00	29.89	Ave.	184	1.7	H	2.01	31.90	54	22.1
Middle Channel									
1830.00	49.40	PK	22	1.3	H	-4.87	44.53	74	29.47
1830.00	45.63	Ave.	22	1.3	H	-4.87	40.76	54	13.24
2745.00	43.68	PK	46	2.0	H	-0.01	43.67	74	30.33
2745.00	33.90	Ave.	46	2.0	H	-0.01	33.89	54	20.11
3660.00	43.17	PK	9	1.4	H	2.90	46.07	74	27.93
3660.00	30.06	Ave.	9	1.4	H	2.90	32.96	54	21.04
High Channel									
1854.00	49.90	PK	326	1.4	H	-4.99	44.91	74	29.09
1854.00	45.94	Ave.	326	1.4	H	-4.99	40.95	54	13.05
2781.00	43.56	PK	350	2.4	H	0.02	43.58	74	30.42
2781.00	33.98	Ave.	350	2.4	H	0.02	34.00	54	20
3708.00	43.81	PK	294	1.2	H	2.90	46.71	74	27.29
3708.00	31.25	Ave.	294	1.2	H	2.90	34.15	54	19.85

250 kHz

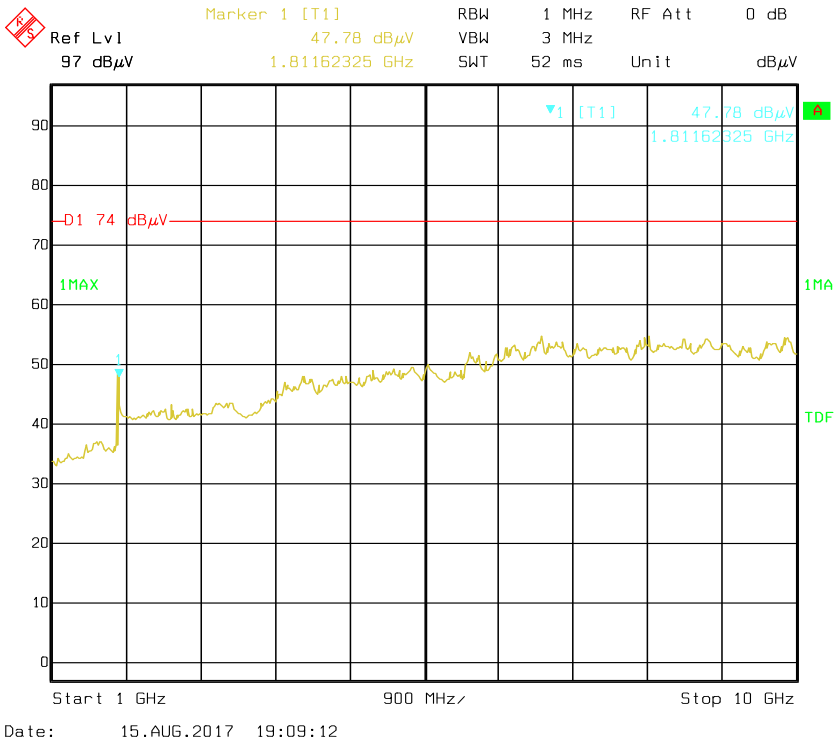
Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	FCC Part 15.249/15.205/15.209	
	Reading (dBμV)	PK/QP/Ave.		Height (m)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
Low Channel									
1806.00	52.10	PK	324	2.2	H	-4.87	47.23	74	26.77
1806.00	48.25	Ave.	324	2.2	H	-4.87	43.38	54	10.62
2709.00	44.94	PK	175	1.4	H	-0.01	44.93	74	29.07
2709.00	31.83	Ave.	175	1.4	H	-0.01	31.82	54	22.18
3612.00	43.10	PK	178	1.0	H	2.01	45.11	74	28.89
3612.00	29.17	Ave.	178	1.0	H	2.01	31.18	54	22.82
Middle Channel									
1830.00	48.65	PK	198	1.6	H	-4.87	43.78	74	30.22
1830.00	43.95	Ave.	198	1.6	H	-4.87	39.08	54	14.92
2745.00	44.26	PK	218	1.5	H	-0.01	44.25	74	29.75
2745.00	33.27	Ave.	218	1.5	H	-0.01	33.26	54	20.74
3660.00	42.79	PK	51	2.2	H	2.90	45.69	74	28.31
3660.00	29.29	Ave.	51	2.2	H	2.90	32.19	54	21.81
High Channel									
1854.00	50.09	PK	254	2.5	H	-4.99	45.10	74	28.9
1854.00	45.17	Ave.	254	2.5	H	-4.99	40.18	54	13.82
2781.00	45.04	PK	24	2.0	H	0.02	45.06	74	28.94
2781.00	33.67	Ave.	24	2.0	H	0.02	33.69	54	20.31
3708.00	43.01	PK	330	2.2	H	2.90	45.91	74	28.09
3708.00	28.84	Ave.	330	2.2	H	2.90	31.74	54	22.26

500 kHz

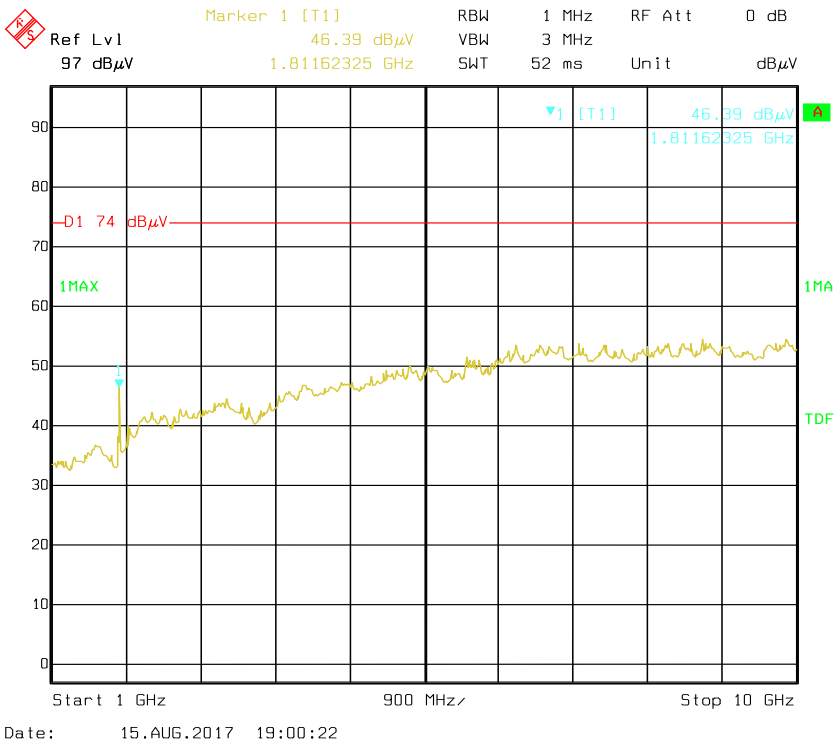
Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	FCC Part 15.249/15.205/15.209	
	Reading (dBμV)	PK/QP/Ave.		Height (m)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
Low Channel									
1806.00	52.14	PK	142	2.2	H	-4.87	47.27	74	26.73
1806.00	46.64	Ave.	142	2.2	H	-4.87	41.77	54	12.23
2709.00	44.52	PK	157	1.6	H	-0.01	44.51	74	29.49
2709.00	31.58	Ave.	157	1.6	H	-0.01	31.57	54	22.43
3612.00	43.14	PK	92	1.0	H	2.01	45.15	74	28.85
3612.00	28.69	Ave.	92	1.0	H	2.01	30.70	54	23.3
Middle Channel									
1830.00	50.32	PK	339	1.0	H	-4.87	45.45	74	28.55
1830.00	42.34	Ave.	339	1.0	H	-4.87	37.47	54	16.53
2745.00	44.86	PK	176	1.9	H	-0.01	44.85	74	29.15
2745.00	32.81	Ave.	176	1.9	H	-0.01	32.80	54	21.2
3660.00	43.55	PK	256	2.1	H	2.90	46.45	74	27.55
3660.00	29.64	Ave.	256	2.1	H	2.90	32.54	54	21.46
High Channel									
1854.00	50.30	PK	128	1.6	H	-4.99	45.31	74	28.69
1854.00	43.39	Ave.	128	1.6	H	-4.99	38.40	54	15.6
2781.00	44.41	PK	227	1.8	H	0.02	44.43	74	29.57
2781.00	33.88	Ave.	227	1.8	H	0.02	33.90	54	20.1
3708.00	43.63	PK	94	1.5	H	2.90	46.53	74	27.47
3708.00	29.28	Ave.	94	1.5	H	2.90	32.18	54	21.82

Note:
Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
Corrected Amplitude = Corrected Factor + Reading
Margin = Limit - Corrected. Amplitude

Pre-scan and worst case for Horizontal as below



Pre-scan and worst case for vertical as below



For BLE and LoRa co-location transmitting simultaneously:

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	FCC Part 15.205/209	
	Reading (dBμV)	PK/QP/Ave.		Height (m)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
2391.45	43.23	PK	311	1.3	H	-6.46	36.77	74	37.23
2391.45	29.19	Ave.	311	1.3	H	-6.46	22.73	54	31.27
2391.45	42.61	PK	185	1.6	V	-6.46	36.15	74	37.85
2391.45	48.57	Ave.	185	1.6	V	-6.46	42.11	54	11.89

FCC§15.215(c) - 20dB EMISSION BANDWIDTH

Applicable Standard

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in § 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

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 without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. 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 indicated 20dB bandwidth.

4. Repeat above procedures until all frequencies measured were complete.

Test Data

Environmental Conditions

Temperature:	23 ℃
Relative Humidity:	54 %
ATM Pressure:	101.0 kPa

The testing was performed by Kobe Li on 2018-01-24.

Please refer to the following table and plots.

Test Mode: Transmitting

125 kHz

Channel	Frequency (MHz)	20dB Bandwidth (MHz)
Low Channel	903	0.142
Middle Channel	915	0.141
High Channel	927	0.142

250 kHz

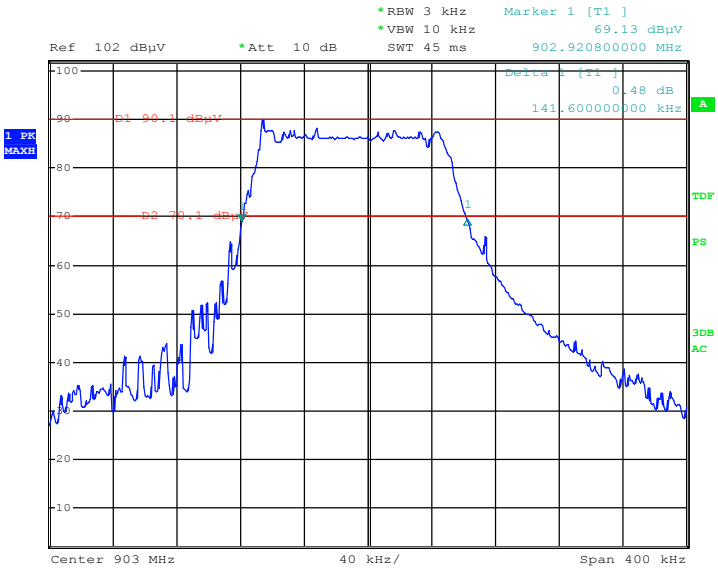
Channel	Frequency (MHz)	20dB Bandwidth (MHz)
Low Channel	903	0.289
Middle Channel	915	0.283
High Channel	927	0.287

500 kHz

Channel	Frequency (MHz)	20dB Bandwidth (MHz)
Low Channel	903	0.645
Middle Channel	915	0.651
High Channel	927	0.657

125 kHz

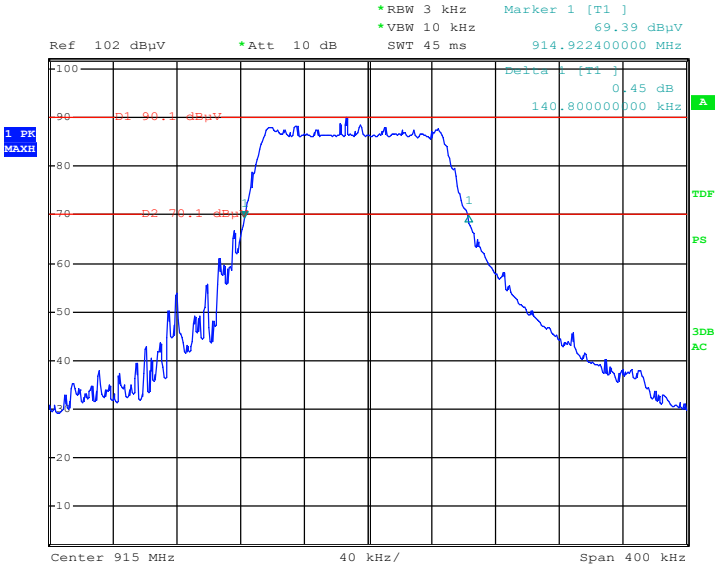
Low Channel



EUT

Date: 24.JAN.2018 17:54:03

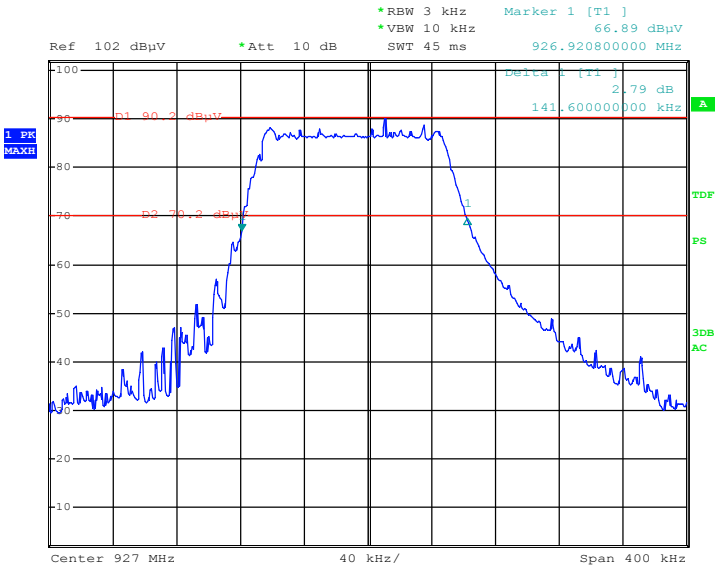
Middle Channel



EUT

Date: 24.JAN.2018 17:48:58

High Channel

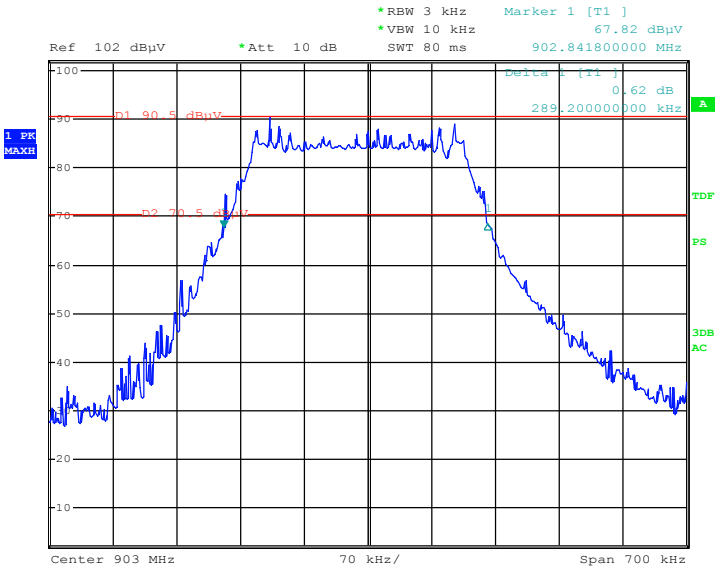


EUT

Date: 24.JAN.2018 17:47:05

250 kHz

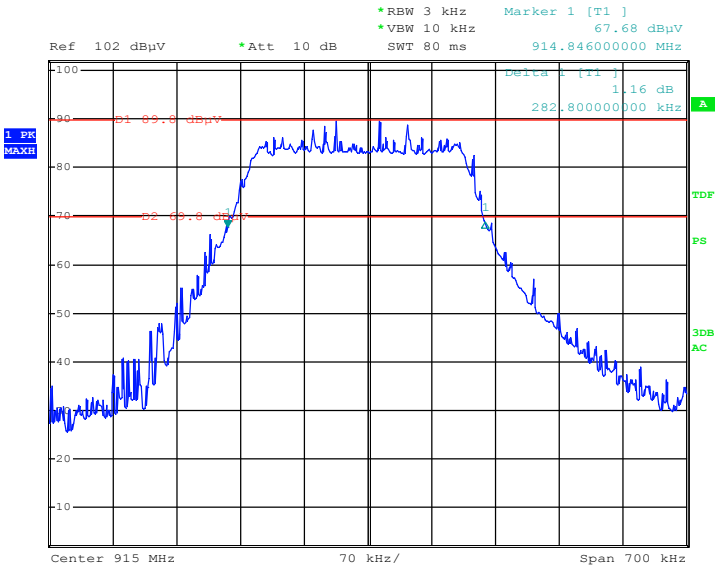
Low Channel



EUT

Date: 24.JAN.2018 17:57:28

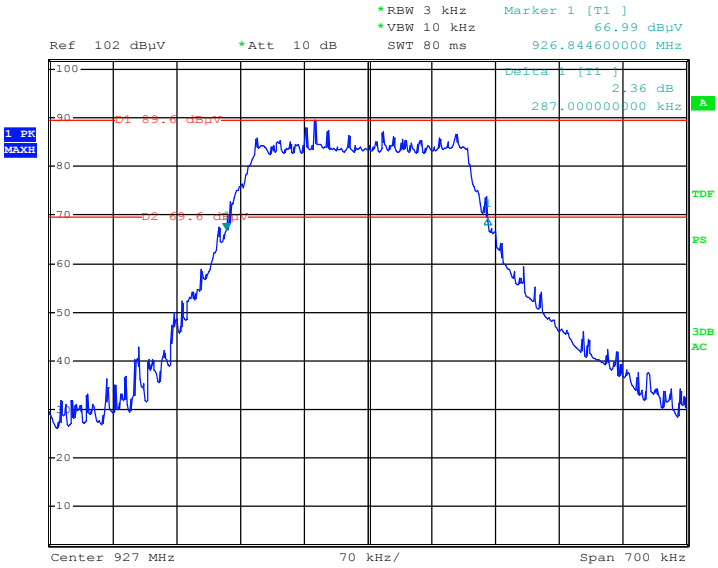
Middle Channel



EUT

Date: 24.JAN.2018 18:00:23

High Channel

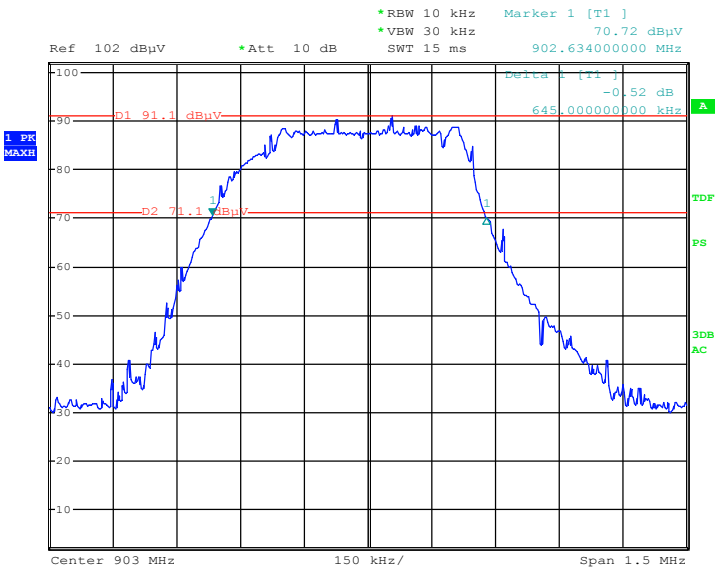


EUT

Date: 24.JAN.2018 18:02:21

500 kHz

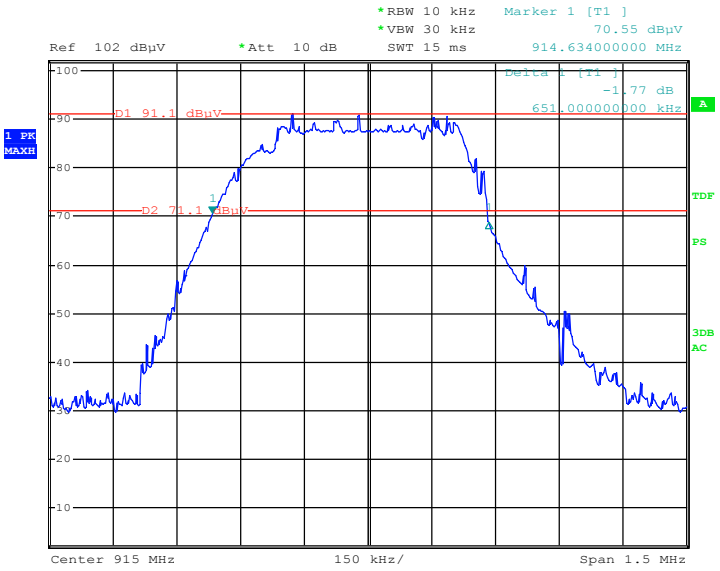
Low Channel



EUT

Date: 24.JAN.2018 18:08:28

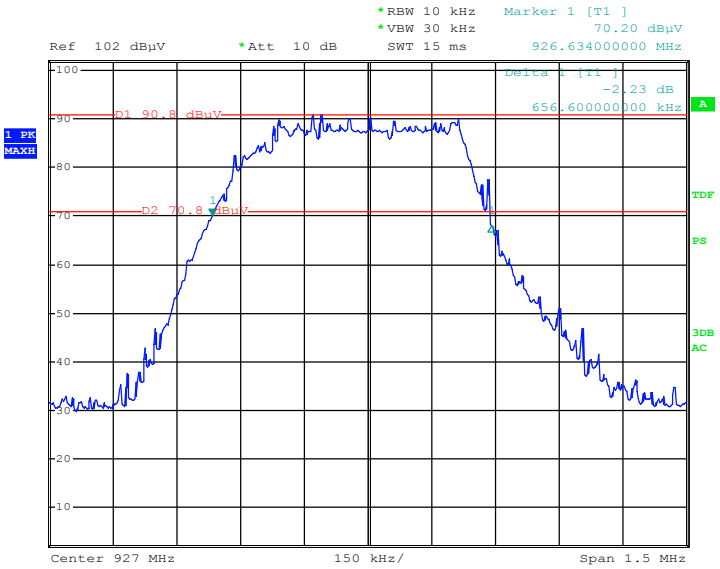
Middle Channel



EUT

Date: 24.JAN.2018 18:06:38

High Channel



EUT

Date: 24.JAN.2018 18:04:58

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