

FCC PART 15.247 TEST REPORT

For

Sky Phone LLC

1348 Washington Av. Suite 350, Miami Beach, Florida, United States

FCC ID: 2ABOSSKYELITE4T

Report Type: Class II Permissive Change	Product Type: 4G Smart Phone
Report Number: RSZ180115028-00BA1	
Report Date: 2018-03-28	
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Note: This report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP* or any agency of the Federal Government. * This report may contain data that are not covered by the NVLAP accreditation and are marked with an asterisk

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TABLE OF CONTENTS

DOCUMENT REVISION HISTORY	3
GENERAL INFORMATION.....	4
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	4
OBJECTIVE	4
RELATED SUBMITTAL(S)/GRANT(S).....	4
TEST METHODOLOGY	4
MEASUREMENT UNCERTAINTY	5
TEST FACILITY	5
SYSTEM TEST CONFIGURATION.....	6
DESCRIPTION OF TEST CONFIGURATION	6
EUT EXERCISE SOFTWARE	6
SPECIAL ACCESSORIES.....	6
EQUIPMENT MODIFICATIONS	6
SUPPORT EQUIPMENT LIST AND DETAILS	6
EXTERNAL I/O CABLE.....	6
BLOCK DIAGRAM OF TEST SETUP	7
SUMMARY OF TEST RESULTS.....	8
TEST EQUIPMENT LIST	9
FCC§15.247 (i), §1.1307 (b) (1) &§2.1093 – RF EXPOSURE	10
APPLICABLE STANDARD	10
FCC §15.203 – ANTENNA REQUIREMENT	11
APPLICABLE STANDARD	11
ANTENNA CONNECTOR CONSTRUCTION	11
FCC §15.205, §15.209 & §15.247(d) – RADIATED EMISSIONS.....	12
APPLICABLE STANDARD	12
EUT SETUP	12
EMI TEST RECEIVER & SPECTRUM ANALYZER SETUP	13
TEST PROCEDURE	13
CORRECTED AMPLITUDE & MARGIN CALCULATION	13
TEST RESULTS SUMMARY	13
TEST DATA	14

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	RSZ180115028-00BA1	Original Report	2018-02-07
1	RSZ180115028-00BA1	Updated Report", "*****	2018-03-20
2	RSZ180115028-00AA1	Updated Report , , *****	2018-03-28

Note:

1.* Added the FCC Part 15B JBP into the related submittal(s)/grant(s).

2. ** Updated the model of Adapter, it not affect any test data, so we only updated the information of adapter and the adapter label view.

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Sky Phone LLC*'s product, model number: Elite 45T (FCC ID: 2ABOSSKYELITE4T) or the "EUT" in this report was a 4G Smart Phone, which was measured approximately:
13.4 cm (L) × 6.9cm (W) × 1.1 cm (H), rated with input voltage: DC 3.7 V battery or DC 5V from adapter.

Adapter Information:

Model: Elite 45T

Input: AC 100-240V, 50/60Hz, 0.15 A

Output: DC 5.0V, 0.5 A

**All measurement and test data in this report was gathered from production sample serial number: 1800063. (Assigned by BACL, Shenzhen). The EUT supplied by the applicant was received on 2018-01-15.*

Objective

This test report is prepared on behalf of *Sky Phone LLC* in accordance with Part 2-Subpart J, 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, section 15.203, 15.205, 15.207, 15.209 and 15.247 rules.

This is a CIIPC application of the device; the differences between the original device and the current one are as follows:

1. Change the model name to "Elite 45T"
2. Change the size and color of EUT.
3. Change all the size of antenna and antenna gain for marketing purpose.
4. Change the battery capacity.

For the change made to the device, the test item "RF Exposure", "Antenna Requirement", and "Spurious Emissions" was performed.

Related Submittal(s)/Grant(s)

FCC Part 15B JBP ,FCC Part 22H/24E/27 PCE and Part 15.247 DTS submissions with FCC ID: 2ABOSSKYELITE4T.

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 Output Power with Power meter		±0.5dB
RF conducted test with spectrum		±1.5dB
AC Power Lines Conducted Emissions		±1.95dB
Emissions, Radiated	Below 1GHz	±4.75dB
	Above 1GHz	±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

Description of Test Configuration

The system was configured for testing in an engineering mode.

EUT Exercise Software

No exercise software was made to the EUT tested.

Special Accessories

No special accessory.

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

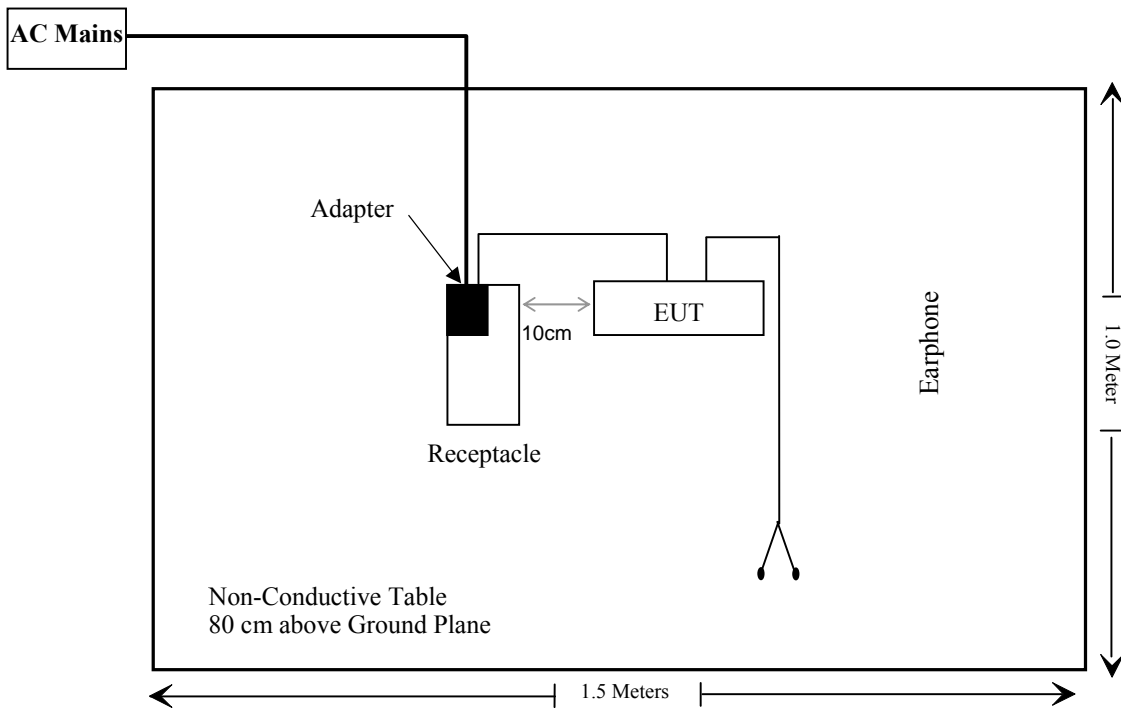
Manufacturer	Description	Model	Serial Number
N/A	N/A	N/A	N/A

External I/O Cable

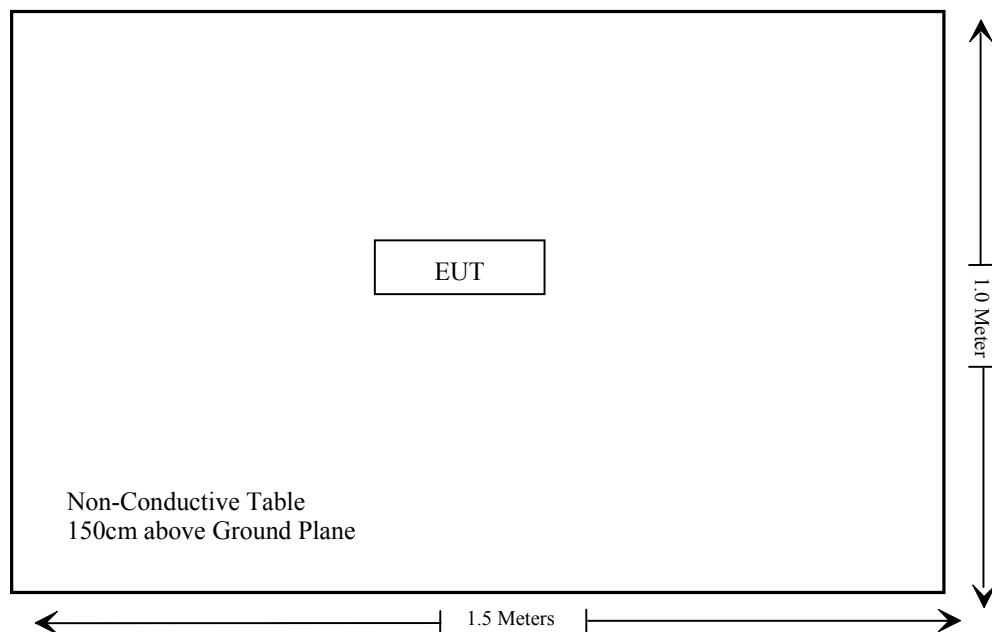
Cable Description	Length (m)	From Port	To
Un-Shielding Detachable USB Cable	1.0	EUT	Adapter

Block Diagram of Test Setup

For Radiated Emissions below 1GHz:



For Radiated Emissions above 1GHz:



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
FCC§15.247 (i), §1.1307 (b) (1) & §2.1093	RF Exposure	Compliance
§15.203	Antenna Requirement	Compliance
§15.207(a)	AC Line Conducted Emissions	Compliance*
§15.205, §15.209 & §15.247(d)	Radiated Emissions	Compliance
§15.247(a)(1)	20 dB Emission 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*

Compliance*: Please referred to FCC ID: 2ABOSSKYELITE4T granted on 2018-02-13.

Report No.: RSZ180110001-00B, which was tested by Hill He , Bay Area Compliance Laboratories Corp. (Shenzhen).

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test					
A.H.System	Horn Antenna	SAS-200/571	135	2015-08-18	2018-08-17
Rohde & Schwarz	Signal Analyzer	FSIQ26	8386001028	2017-04-24	2018-04-24
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2017-05-21	2018-05-21
HP	Amplifier	HP8447E	1937A01046	2017-11-19	2018-05-21
Sunol Sciences	Broadband Antenna	JB1	A040904-2	2017-12-17	2020-12-16
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2017-12-07	2018-12-07
Ducommun technologies	RF Cable	UFA210A-1-4724-30050U	MFR64369 223410-001	2017-11-19	2018-05-21
Ducommun technologies	RF Cable	104PEA	218124002	2017-11-19	2018-05-21
Ducommun technologies	RF Cable	RG-214	1	2017-11-19	2018-05-21
Ducommun technologies	RF Cable	RG-214	2	2017-11-19	2018-05-21
Ducommun Technologies	Horn Antenna	ARH-4223-02	1007726-04	2017-12-29	2020-12-28
Ducommun Technologies	Pre-amplifier	ALN-22093530-01	991373-01	2017-08-03	2018-08-03
Sinoscite	Band Reject Filter	BSF2402-2480MN-0898-001	N/A	2017-05-21	2018-05-21

* **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§15.247 (i), §1.1307 (b) (1) & §2.1093 – RF EXPOSURE

Applicable Standard

According to FCC §2.1093 and §1.1307(b) (1), 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 KDB 447498 D01 General RF Exposure Guidance

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:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

1. $f(\text{GHz})$ is the RF channel transmit frequency in GHz.
2. Power and distance are rounded to the nearest mW and mm before calculation.
3. The result is rounded to one decimal place for comparison.
4. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test Exclusion.

For worst case:

Frequency (MHz)	Maximum Tune-up power		Calculated Distance (mm)	Calculated value	Threshold (1-g SAR)	SAR Test Exclusion
	(dBm)	(mW)				
2480	8.0	6.3	5.0	2.0	3.0	Yes

Result: No Standalone SAR test is required

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.

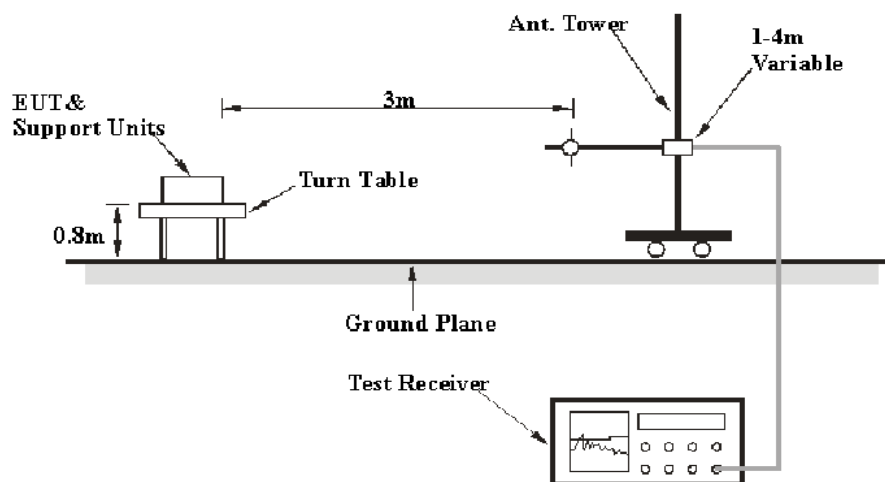
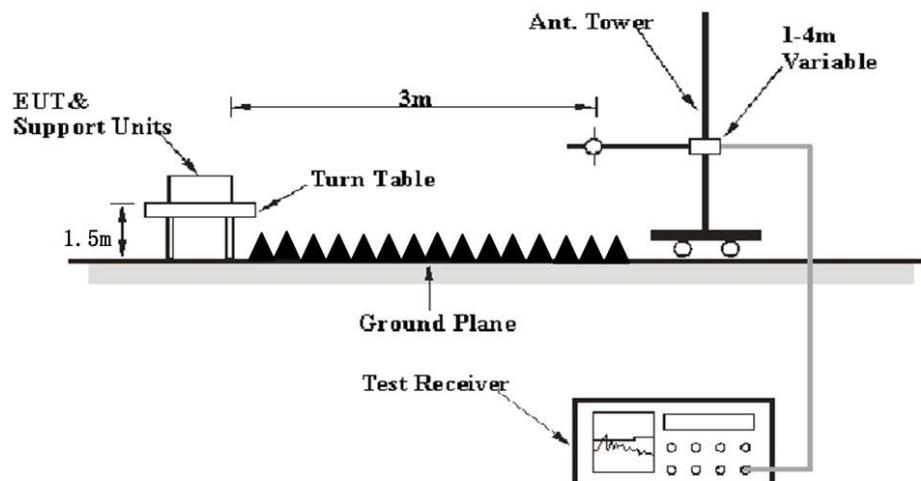
Antenna Connector Construction

The EUT has one internal antenna arrangement, which was permanently attached and the antenna gain is 1.15 dBi, fulfill the requirement of this section. Please refer to the EUT photos.

Result: Compliance.

FCC §15.205, §15.209 & §15.247(d) – RADIATED EMISSIONS**Applicable Standard**

FCC §15.205; §15.209; §15.247(d)

EUT Setup**Below 1 GHz:****Above 1GHz:**

The radiated emission tests were performed in the 3 meters, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209 and FCC 15.247 limits.

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	100 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1 MHz	3 MHz	/	PK
	1 MHz	10 Hz	/	Average

Test Procedure

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

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

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:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

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:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Title 47, Part 15, Subpart C, section 15.205, 15.209 and 15.247.

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

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

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

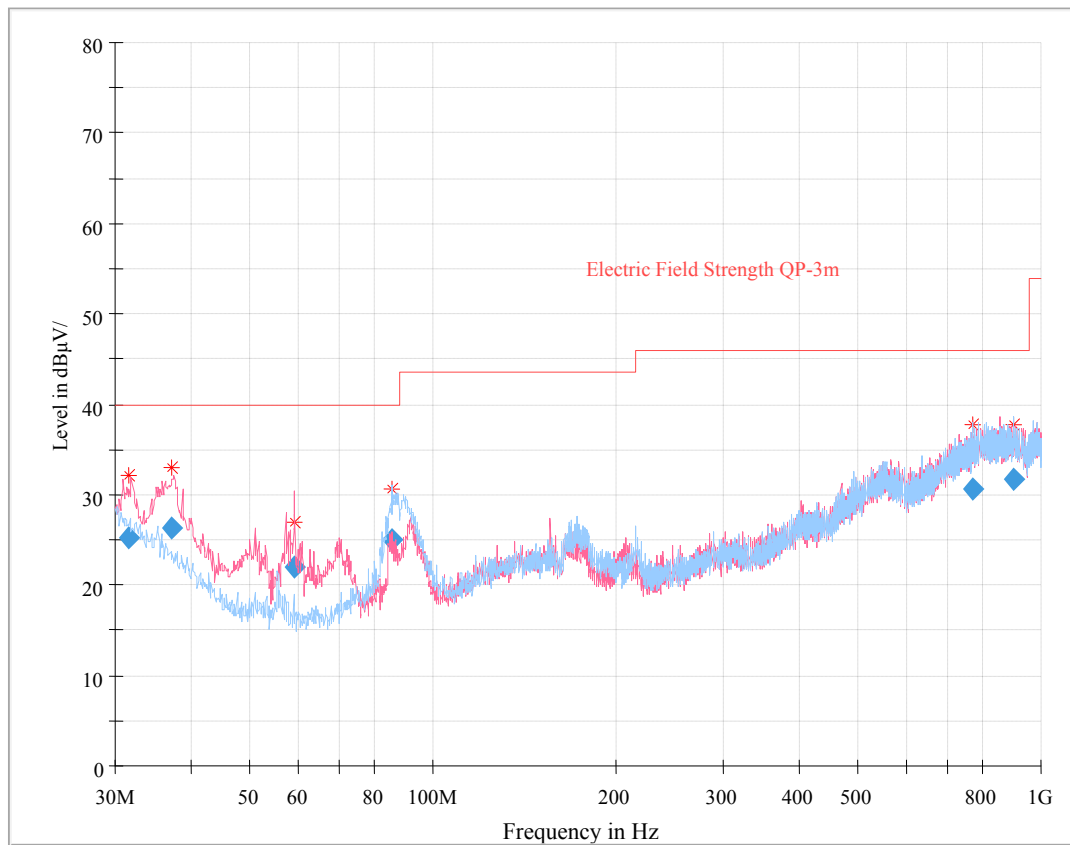
Test Data**Environmental Conditions**

Temperature:	25 °C
Relative Humidity:	52 %
ATM Pressure:	101.0 kPa

The testing was performed by Hill He on 2018-01-30.

EUT operation mode: Transmitting (Scan with GFSK, $\pi/4$ -DQPSK, 8-DPSK mode, the worst case is 8-DPSK Mode)

30 MHz~1 GHz:



Frequency (MHz)	Corrected Amplitude (dBμV/m)	Antenna height (cm)	Antenna Polarity	Turntable position (degree)	Correction Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
31.475750	25.18	118.0	V	0.0	-0.7	40.00	14.82
37.100125	26.23	100.0	V	0.0	-4.3	40.00	13.77
59.079125	22.01	248.0	V	0.0	-11.8	40.00	17.99
85.811625	24.97	400.0	H	85.0	-10.8	40.00	15.03
770.511750	30.58	207.0	H	289.0	8.2	46.00	15.42
901.323625	31.64	313.0	H	309.0	9.7	46.00	14.36

1 GHz - 25 GHz:

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBµV/m)	FCC Part 15.247/205/209	
	Reading (dBµV)	PK/QP/Ave.		Height (m)	Polar (H/V)			Limit (dBµV/m)	Margin (dB)
Low Channel (2402 MHz)									
2402.00	56.46	PK	245	1.6	H	33.92	90.38	/	/
2402.00	45.99	Ave.	245	1.6	H	33.92	79.91	/	/
2402.00	57.60	PK	339	1.9	V	33.92	91.52	/	/
2402.00	46.86	Ave.	339	1.9	V	33.92	80.78	/	/
2383.58	28.36	PK	267	1.2	V	33.92	62.28	74	11.72
2383.58	14.27	Ave.	267	1.2	V	33.92	48.19	54	5.81
2484.88	27.26	PK	314	1.6	V	34.08	61.34	74	12.66
2484.88	13.57	Ave.	314	1.6	V	34.08	47.65	54	6.35
4804.00	43.24	PK	328	2.4	V	5.84	49.08	74	24.92
4804.00	28.75	Ave.	328	2.4	V	5.84	34.59	54	19.41
Middle Channel (2441 MHz)									
2441.00	57.24	PK	118	1.8	H	33.92	91.16	/	/
2441.00	46.45	Ave.	118	1.8	H	33.92	80.37	/	/
2441.00	57.82	PK	355	1.9	V	33.92	91.74	/	/
2441.00	46.97	Ave.	355	1.9	V	33.92	80.89	/	/
4882.00	42.97	PK	44	1.3	V	6.21	49.18	74	24.82
4882.00	28.87	Ave.	44	1.3	V	6.21	35.08	54	18.92

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB)	Corrected Amplitude (dBμV/m)	FCC Part 15.247/205/209	
	Reading (dBμV)	PK/QP/Ave.		Height (m)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
High Channel (2480 MHz)									
2480.00	57.46	PK	138	1.3	H	34.08	91.54	/	/
2480.00	46.80	Ave.	138	1.3	H	34.08	80.88	/	/
2480.00	57.96	PK	204	1.9	V	34.08	92.04	/	/
2480.00	46.94	Ave.	204	1.9	V	34.08	81.02	/	/
2375.37	28.36	PK	9	2.0	V	33.92	62.28	74	11.72
2375.37	14.20	Ave.	9	2.0	V	33.92	48.12	54	5.88
2486.34	27.56	PK	39	1.8	V	34.08	61.64	74	12.36
2486.34	13.82	Ave.	39	1.8	V	34.08	47.90	54	6.10
4960.00	43.15	PK	312	1.0	V	7.82	50.97	74	23.03
4960.00	29.27	Ave.	312	1.0	V	7.82	37.09	54	16.91

Note:

Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor

Corrected Amplitude = Corrected Factor + Reading

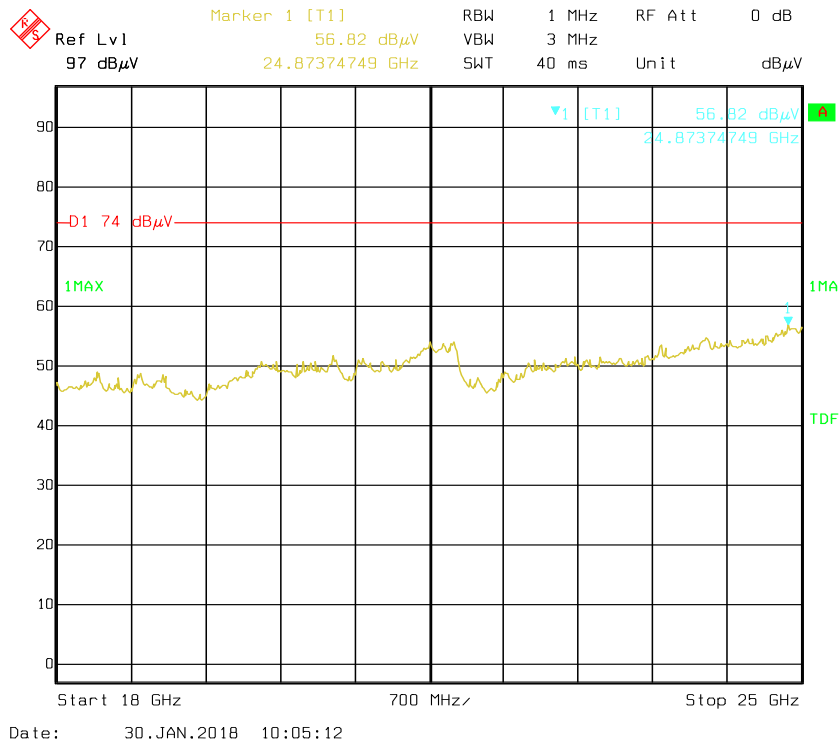
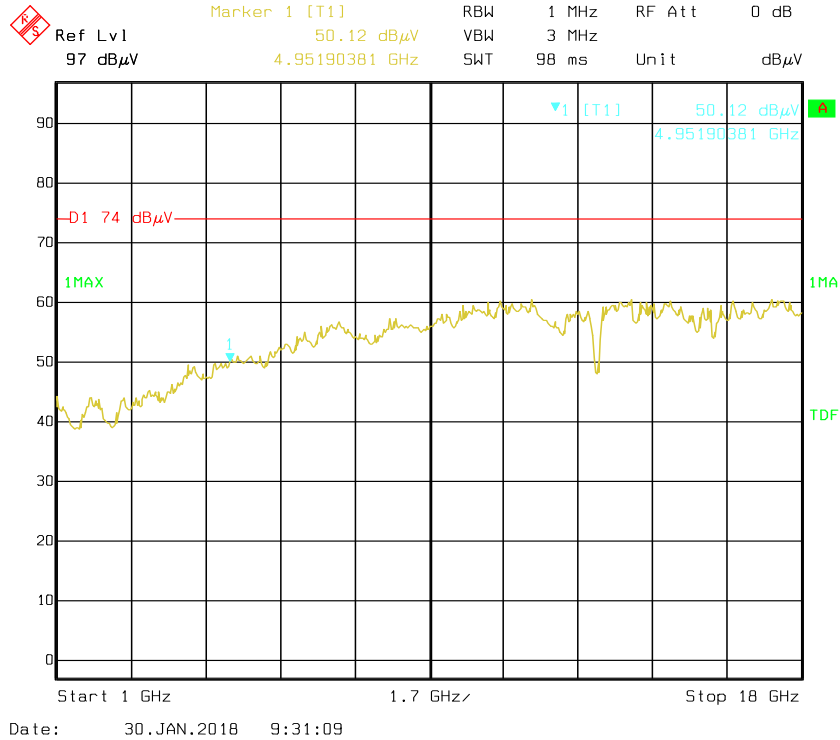
Margin = Limit - Corrected. Amplitude

The other spurious emission which is 20dB to the limit was not recorded.

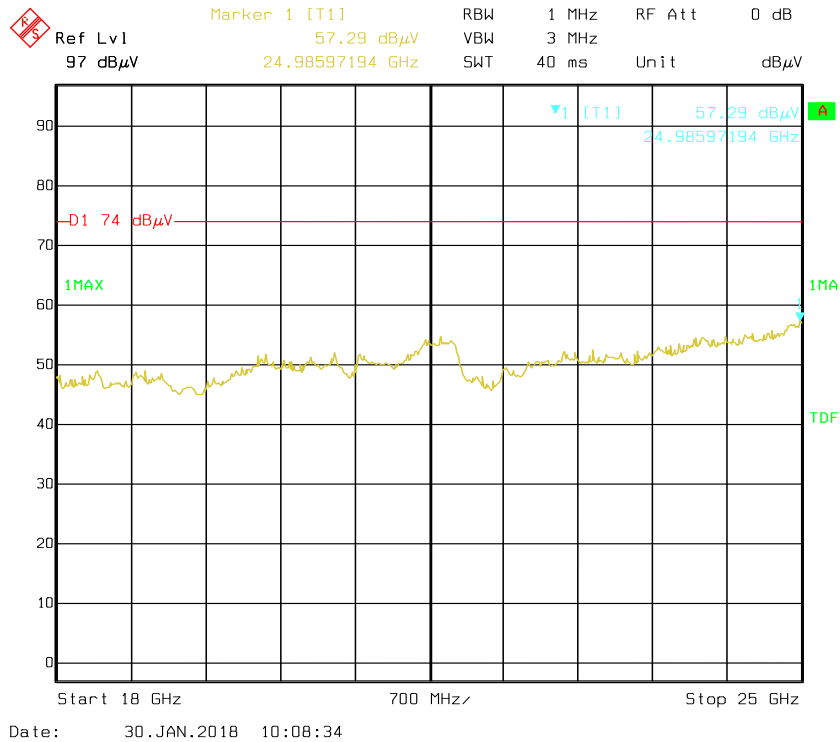
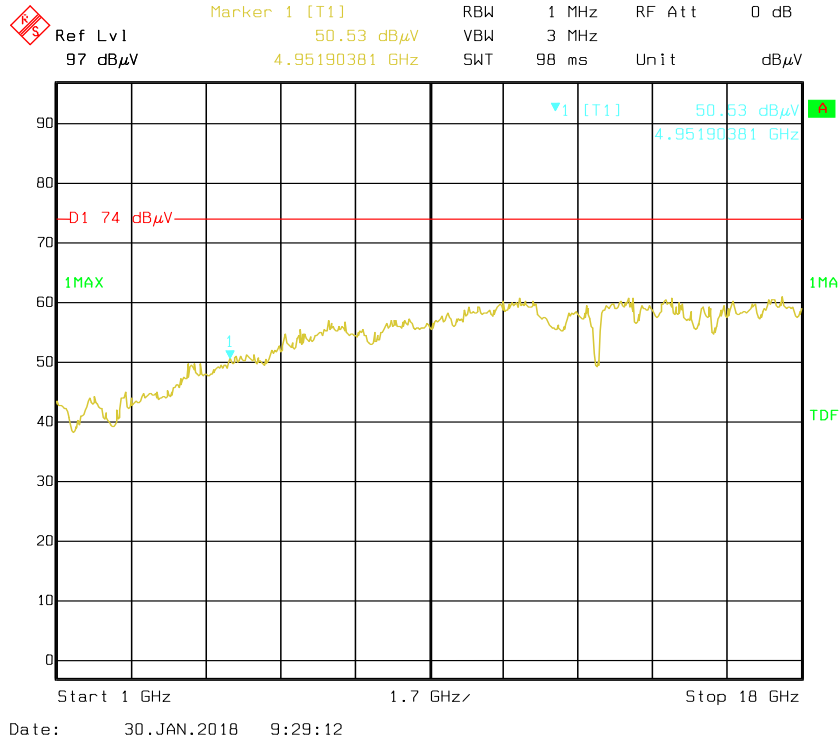
And for the pre-scan is performed with the 2400-2483.5MHz band filter.

Pre-scan PK with middle channel

Horizontal

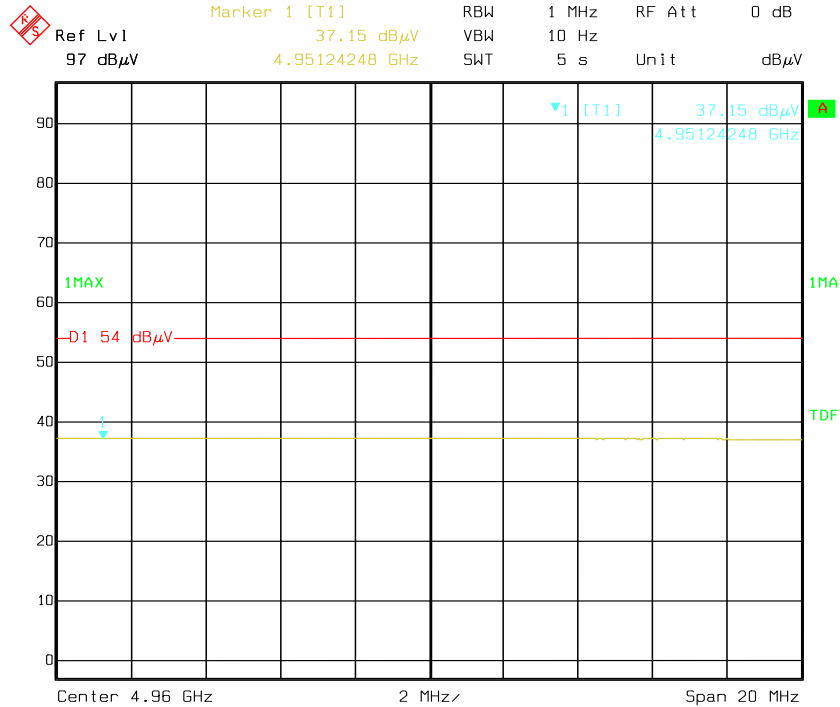


Vertical

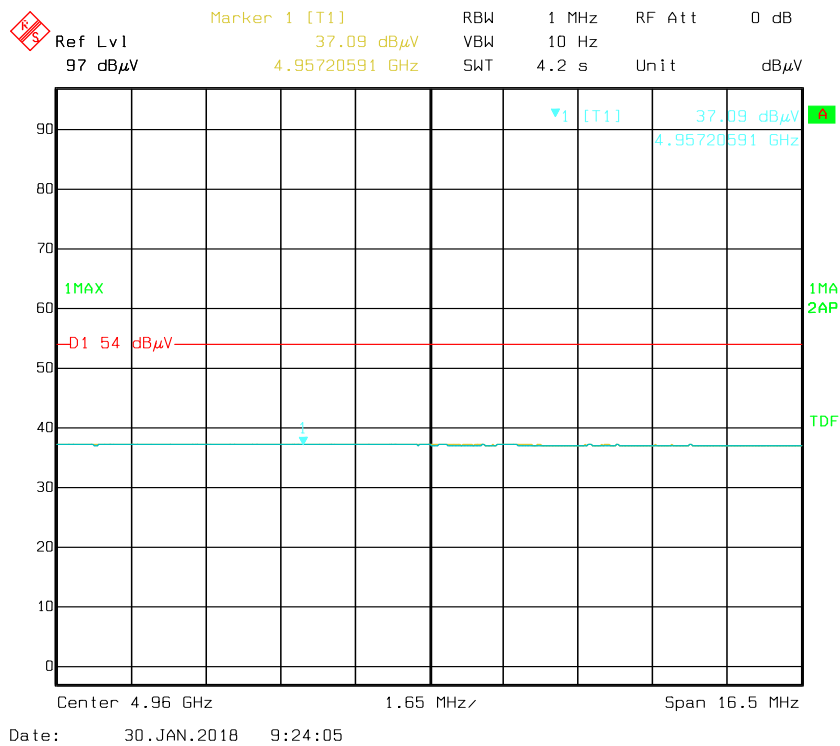


Pre-scan Average with middle channel

Horizontal



Vertical



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