Prüfbericht-Nr.: *Test Report No.:*	60301233-003	**Auftrags-Nr.:** *Order No.:*	23870141	Seite 1 von 34 *Page 1 of 34*
Kunden Referenz-Nr.: Client Reference No.:	1005969	**Auftragsdatum** *Order date:*	2019-09-18	
Auftraggeber: *Client:*	ANTICIMEX INNOVATION CENTER A/S Skovgaardsvej 25 DK-3200 Helsinge Denmark	Mr. Rasmus Skou Bjerre Email: rasmus.skou.bjerre@anticimex.com Phone: +45 26799509		
Prüfgegenstand: *Test item:*	COPA Mesh Module			
Bezeichnung / Typ-Nr.: *Identification / Type No.:*	FCC ID: 2AOFP-E0048			
Auftrags-Inhalt: *Order content:*	Partial FCC Certification testing - Proprietary Sub-GHz radio: 917 MHz - 926 MHz			
Prüfgrundlage: *Test specification:*	FCC Part 15 Subpart C 15.205 & 15.209 ANSI C63.4-2014 & ANSI C63.10-2013			
Wareneingangsdatum: *Date of receipt:*	2019-09-18			
Prüfmuster-Nr.: *Test sample No.:*	A000231818-017			
Prüfzeitraum: *Testing period:*	2019-09-18 to 2019-11-01			
Ort der Prüfung: *Place of testing:*	Lund, Sweden			
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland Sweden			
Prüfergebnis: *Test results:*	Pass			

Geprüft von *Tested by:*	Fariborz Abasi Test Engineer		**Kontrolliert von** *Reviewed by:*	Per Isacsson Lab Manager	
2019-11-06			2019-11-06		
Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*	**Datum** *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*

Sontiges */Other:*

Only Radiated Emissions, FCC Rule parts 15.205, 15.209 are covered in this report

Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden.
This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts.

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Revisions ***Revisions***			
Revision Revision	**Datum** Date	**Anmerkung** Remark	**Verfasser** Author
001	2019-10-17	First release	Fariborz Abasi
002	2019-11-04	Peak emissions added to results above 1GHz	Fariborz Abasi
003	2019-11-06	- Pages 18,23 and 23: added legends in the graphs - Pages 23 and 28: Corrected column titles in the result tables - Pages 29-32: Corrected the second column's title (from average to QuasiPeak)	Fariborz Abasi
Note: Latest revision report will replace all previous reports			

Summary of Test Results

FCC Rule Part	Test item	Result	Remarks
15.107 15.207	Power Line Conducted Emission	N/A	Battery powered
§ 15.209 (a) (f)	Radiated Emission	PASS	
§ 15.215 (a) (b) (c)	Additional provisions to the general radiated emission limitations	Not performed	
§ 15.247 (a)	Frequency Hopping Spread Spectrum Specifications:		
§ 15.247(a)	20 dB Bandwidth	N/A	Not applicable for DTS equipment
§ 15.247 (a) (1) (i)	Number of Hopping Channels Used, Carrier frequency Separation and Time occupancy in band 902÷908MHz	N/A	Not applicable for DTS equipment
§ 15.247 (a) (1) (ii)	Number of Hopping Channels Used, Carrier frequency Separation and Time occupancy in band 5725÷ 5850 MHz	N/A	Not applicable for DTS equipment
§ 15.247 (a) (1) (iii)	Number of Hopping Channels Used, Carrier frequency Separation and Time occupancy in band 2400÷2483,5 MHz	N/A	Not applicable for DTS equipment
§ 15.247 (a) (2)	6dB Minimum Bandwidth for systems using digitally modulation	Not performed	
§ 15.247 (b)	Maximum Peak Output Power:		
§ 15.247 (b) (1)	Peak Output Power (conducted) in band 2400÷2483,5 MHz and 5725÷ 5850 MHz (Hopping systems)	N/A	Not applicable for DTS equipment
§ 15.247 (b) (2)	Peak Output Power (conducted) in band 902÷908MHz (Hopping systems)	N/A	Not applicable for DTS equipment
§ 15.247 (b) (3)	RF power output (conducted) for systems using digitally modulation	Not performed	
§ 15.247 (b) (4)	Antenna gain	Not performed	
§ 15.247 (c)	Operation with directional antenna gains greater than 6 dBi	N/A	
§ 15.247 (d)	Out-of-band emissions	Not performed	
§ 15.247 (d)	100 kHz Bandwidth of Frequency Band Edges	Not performed	
§ 15.247 (e)	Power Spectral Density	Not performed	
§ 15.247 (f)	Hybrid systems	N/A	No hybrid system
§ 15.247 (g)	FHSS Transmission characteristics	N/A	Not applicable for DTS equipment
§ 15.247 (h)	Recognition of occupied channel and multiple transmission system	N/A	Not applicable for DTS equipment

Possible test case verdicts:

- test case does not apply to the test object ....: N/A
- test object does meet the requirement .....: PASS
- test object does not meet the requirement ....: FAIL
- test case not performed on the test object ....: n.p.

Table of contents

1 TEST SITES

Testing facility

TÜV Rheinland Sweden AB
Mobilvägen 10
223 62 Lund
Sweden

FCC Test Firm Registration Number: 517458

2 PRODUCT INFORMATION

2.1 General description

Model name:	Smart Eye Mini
Manufacturer:	Anticimex Innovation Center A/S
Model number:	E0048
FCC ID:	FCC ID: 2AOFP-E0048
Description:	COPA Mesh module
Supported Radio Technologies:	Proprietary Sub-GHz radio: 917 MHz - 926 MHz
Highest internal frequency	926 MHz
Supply Voltage to Product:	3.6V Lithium-type battery
Ancillary Equipment:	None

2.2 Radio specific details

2.2.1 Sub-GHz radio

Operating Frequency Range	917 - 926 MHz
Radio Protocol	Proprietary
Channel Spacing	2 MHz
Number of channels	5
Modulation	WB-DSSS with 8x spreading factor, 2-GFSK, FEC=2
Transmitter duty cycle (normal operation)	<1%
Number of antennas	1
Antenna type	IFA type PCB antenna.
Antenna gain	1,3 dBi

2.3 Equipment Under Test (EUT) identification

TÜV Rheinland ID	S/N	HW	SW
A000231818-017	-	COPA-Mesh E0048-1.01	Copa-Mesh-SW-ver-1.0

2.4 Ancillary equipment identification

None

3 TEST METHODS AND OPERATION MODES

3.1 Test Methods

The following standards/references has been considered for the testing

Reference Standards	
Standard	**Description**
FCC Part 15 (Subpart C)	15.205 Restricted bands of operation
FCC Part 15 (Subpart B)	15.109 Radiated emission limits; general requirements, unintentional radiators
FCC Part 15 (Subpart C)	15.209 Radiated emission limits; general requirements, intentional radiators
ANSI C63.4:2014	Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
ANSI C63.10:2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
KDB 558074 v05r02	Guidance for compliance measurrements on Digital Transmission System, Frequency Hopping Spread Spectrum System and Hybrid System Devices operating under section 15.247 of the FCC rules.

3.2 Operation modes

Testing was performed at the lowest operating frequency, at the operating frequency in the middle of the specified frequency band and at the highest operating frequency of each supported technology as per below.
A special test software was used to enable the continuous transmission of each channel with maximum power this was considered to be the worst cases.
Duty cycle during test was 100%

3.3 Tested channels/Frequencies

Band	Frequency (MHz)
Sub GHz Unlicensed frequency	917
	922
	926

4 TEST METHODOLOGY

4.1 Radiated Emission Test

The radiated emission measurement was performed according to the procedures in ANSI C63.10-2013. The equipment under test (EUT) was placed at the middle of the turntable on an 80cm high table for below 1 GHz & 1.5 m height for above 1 GHz measurement, for frequencies up to 18GHz the EUT is 3 meters far from the measuring antenna, above 18GHz the distance is 1 meter. The turntable was rotated 360° for obtaining the maximum emission. The height of the measuring antennas was scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations. Repeat the measurement steps until the maximum emissions were obtained. The measurements above 1000 MHz was performed by 3 different horn antennas, the measurement below 30 MHz was performed by loop antenna and measurement from 30 MHz to 1 GHz was performed by Log-Periodic Antenna.

Test Setup Configuration

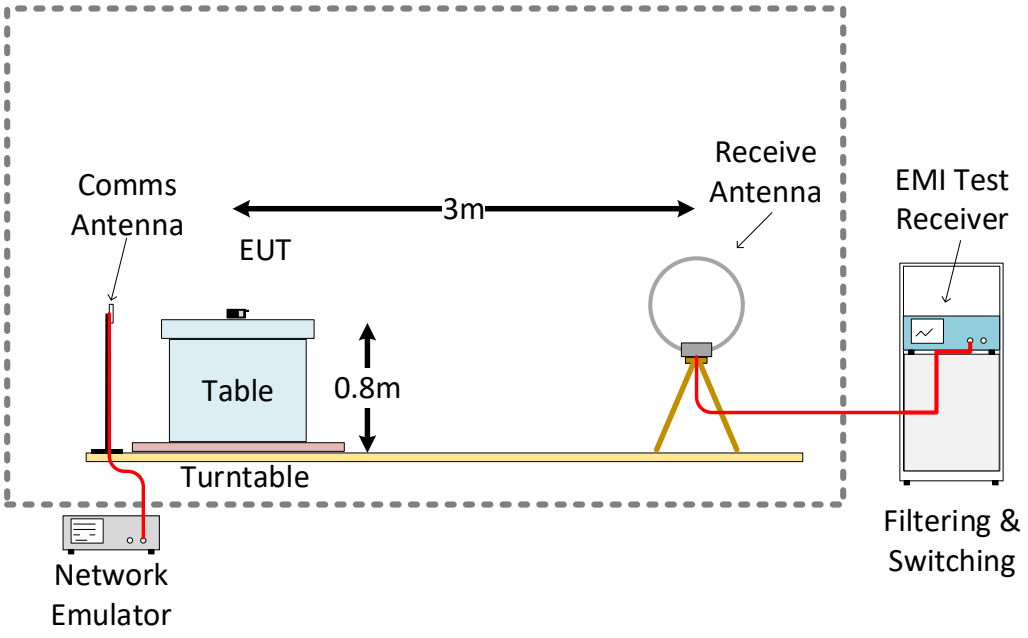


Figure 1: Frequency range 9 KHz – 30 MHz

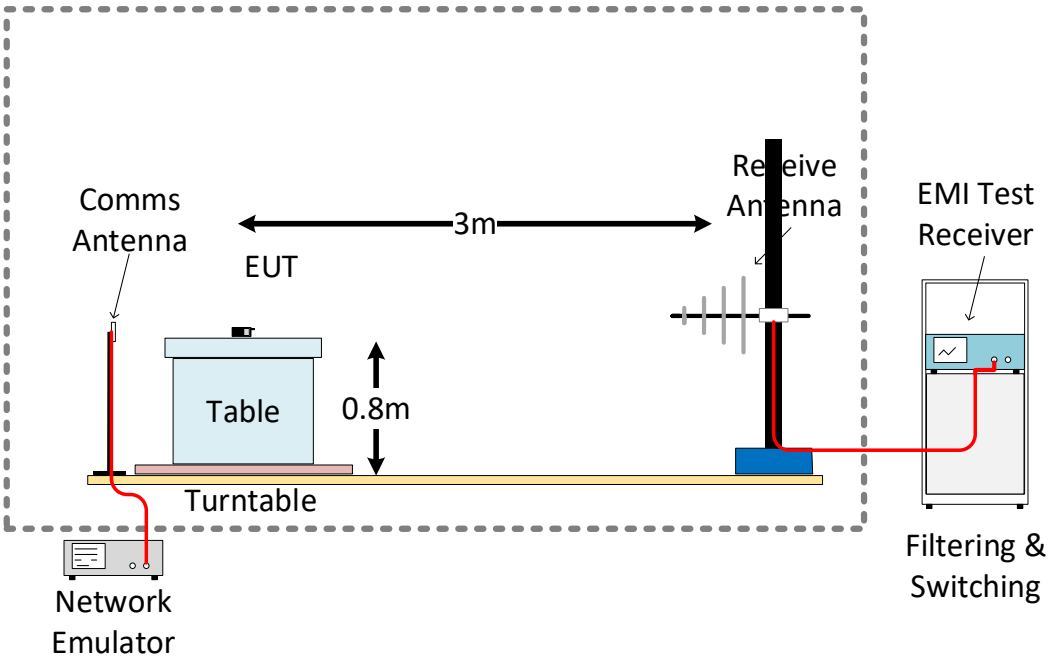


Figure 2: Frequency range 30 MHz – 1 GHz

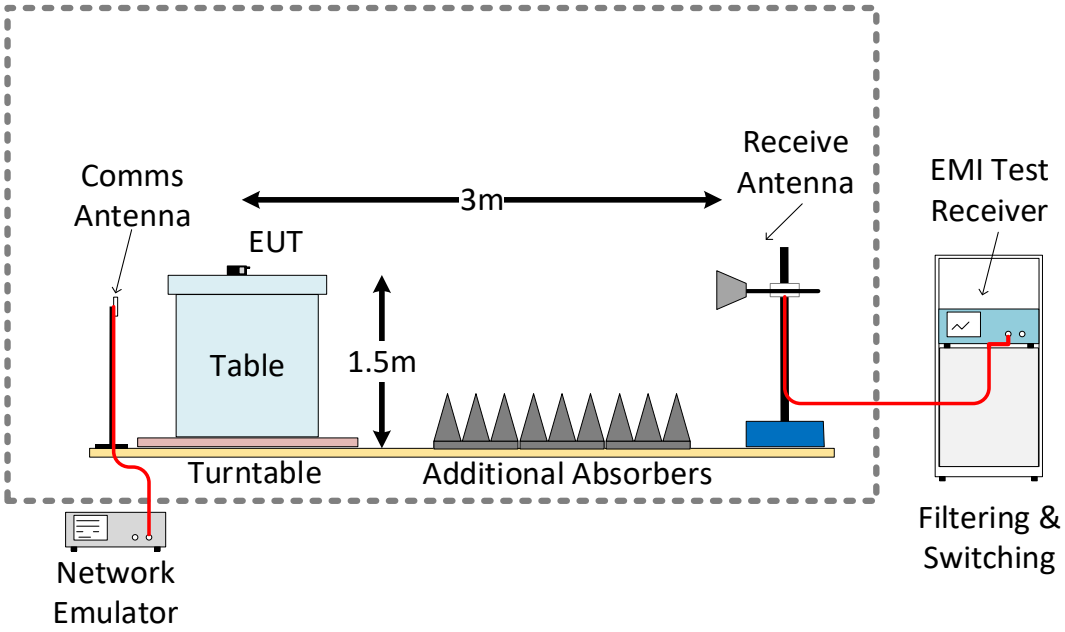


Figure 3: Frequency range 1 GHz – 18 GHz

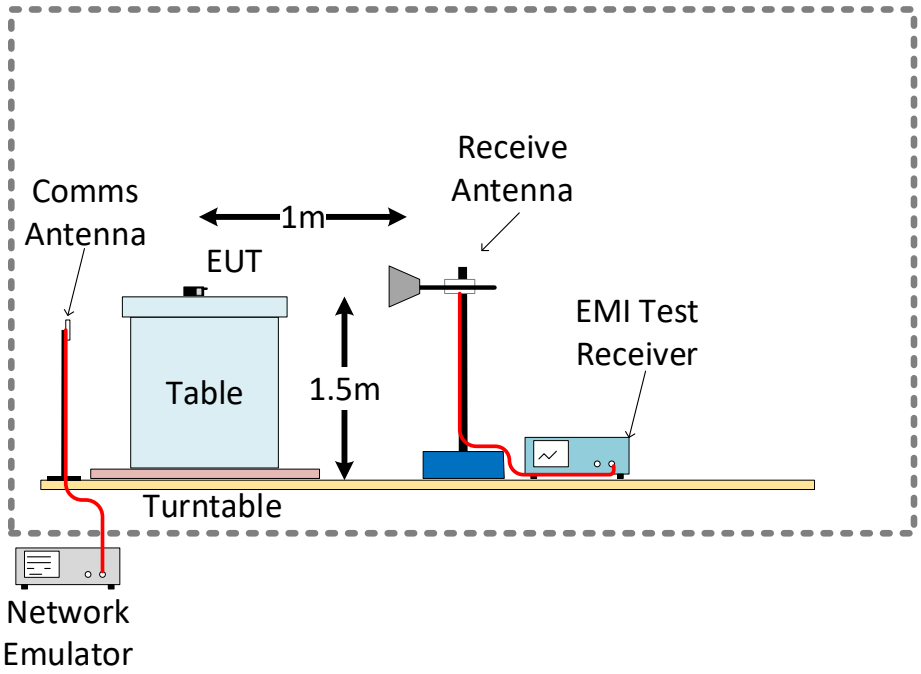


Figure 4: Frequency range 18 GHz – 40 GHz

5 TEST RESULTS – RADIATED EMISSIONS

5.1 Summary - Radiated emissions

Result	Pass
Test period	2019-09-18 -- 2019-10-03
Test Engineer	Fariborz Abasi
Test Specification	FCC part 15 Subpart C Section 15.209 & 15.205 FCC Part 15 Subpart B Section 15.109
Test Method	ANSI C63.10 – 2013 ANSI C63.4 - 2014
Measurement Location	Semi Anechoic Chamber
Measuring Distance	3 m for 9 KHz to 18 GHz
Detector	Quasi-peak, except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz where an Average detector is used.
Requirement	As per the limits mentioned in the below table
Environmental conditions	Temperature: + 18 - 20 °C Relative Humidity: 20 - 40 %

Frequency (MHz)	Field strength (μV/m)	Field strength (dBμV/m)	Distance of Measurement (m)
0.009 – 0.490	2400/F(kHz)	48.50 – 13.80	300*
0.490 – 1.705	24000/F(kHz)	33.80 – 23.00	30*
1.705 -30	30	29.54	30*
30-88	100	40.0	3
88-216	150	43.5	3
216-960	200	46.0	3
Above 960	500	54.0	3

Remark: * The limit shows in the table above of frequency range 0.009 – 0.490, 0.490 – 1.705 MHz and 1.705-30MHz is at 300 meter, 30 meter and 3 meter range respectively, which corresponds to 128.51 – 93.80, 73.80 – 62.96 and 69.54 dBμV/m at 3m range by extrapolation calculation and the measurement of loop antenna.

The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz Radiated emission limits in these three bands are based on measurements employing an average detector.

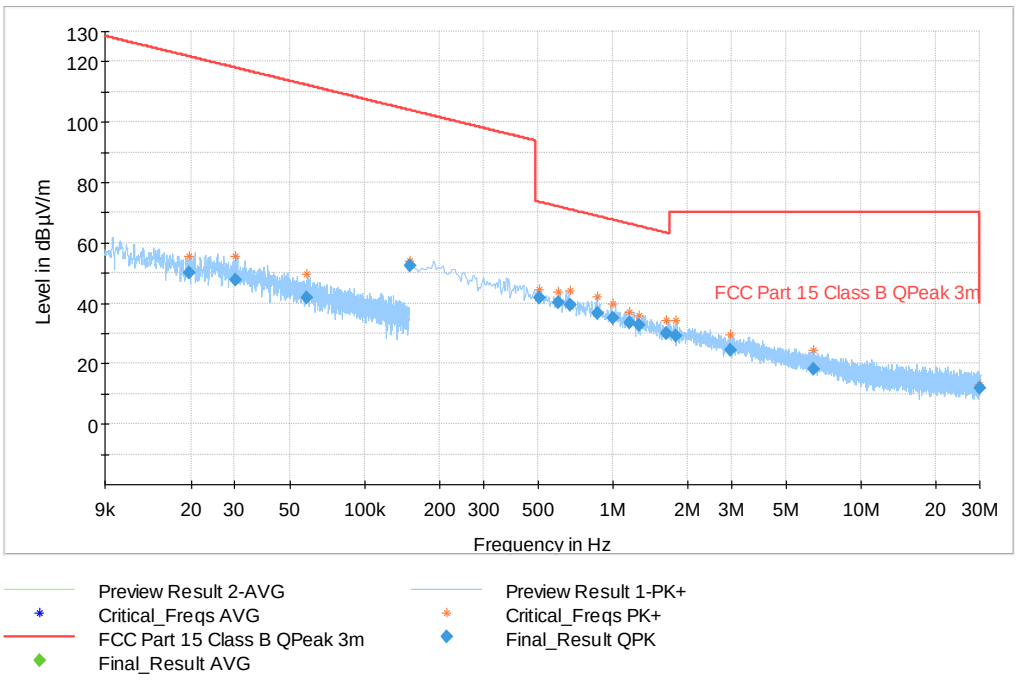
5.2 Test setups

Test	Constellation	EUT Radio	Result
1	Smart connect mini (EUT)	Sub GHz Unlicensed frequencies 917- 922- 926 MHz	PASS

5.3 Detailed Test results - Radiated Emission

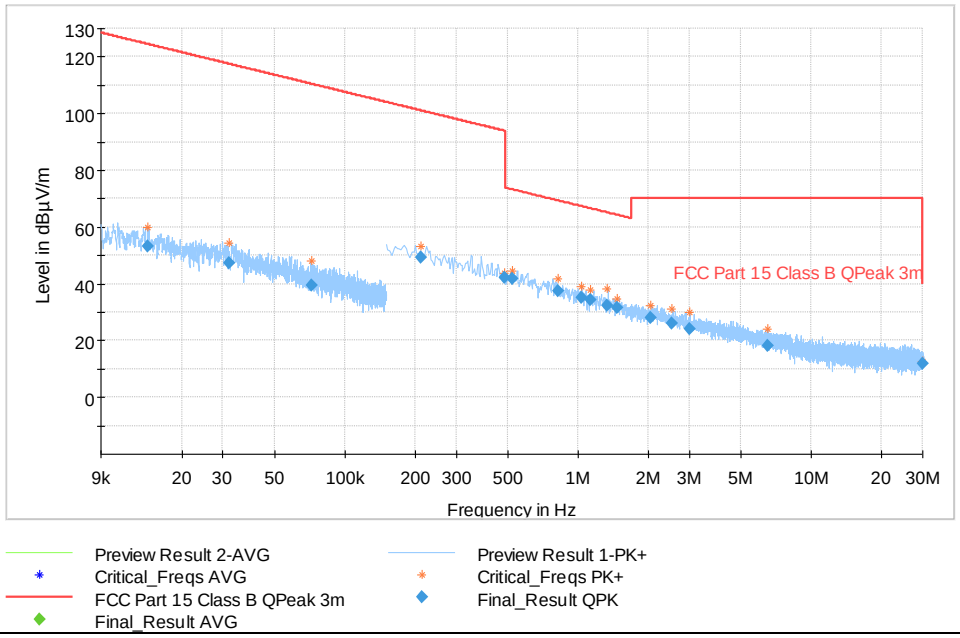
5.3.1 917 MHz proprietary radio frequency

Test mode condition	Traffic (TX)	
Antenna orientation	Perpendicular to axis	
Channel frequency	917 MHz	
Sweep frequency	9 kHz – 30 MHz	
Standard	CFR 47 - FCC Part 15 (C) § 15.209	
EUT	A000231818-017	
Ancillary Equipment	N/A	
Test Engineer	Erik Ingemarsson	Date: 2019-09-26
Environmental conditions	Temperature: 19,2 ^{0}C	Humidity: 45,7 %
Chamber details	Chamber: SAC 5	



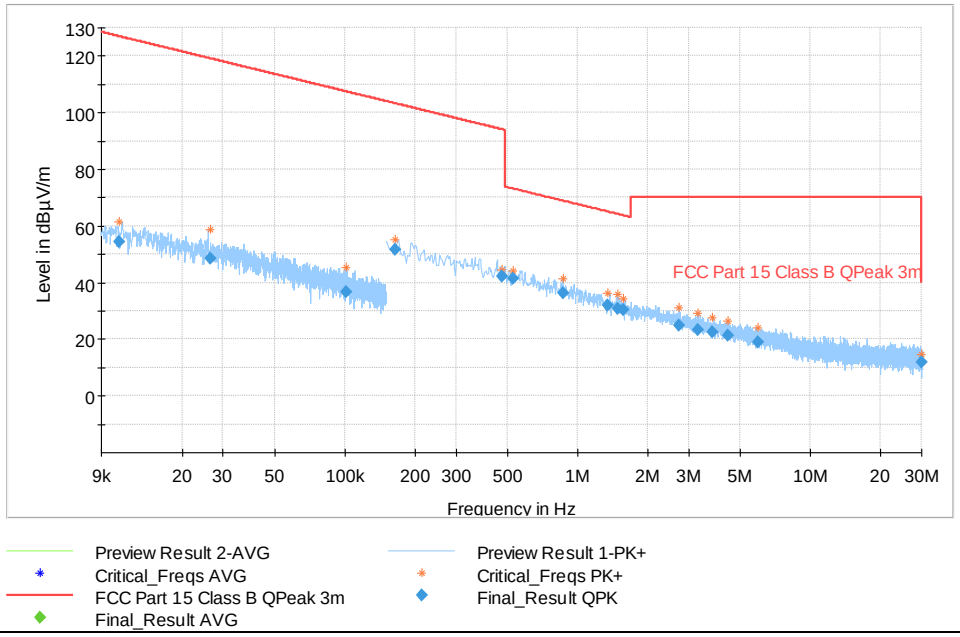
All emissions were greater than 20 dB below the limit.

Test mode condition	Traffic (TX)	
Antenna orientation	Parallel to axis	
Channel frequency	917 MHz	
Sweep frequency	9 kHz – 30 MHz	
Standard	CFR 47 - FCC Part 15 (C) § 15.209	
EUT	A000231818-017	
Ancillary Equipment	N/A	
Test Engineer	Erik Ingemarsson	Date: 2019-09-25
Environmental conditions	Temperature: 19,8 ^{0}C	Humidity: 54,7 %
Chamber details	Chamber: SAC 5	



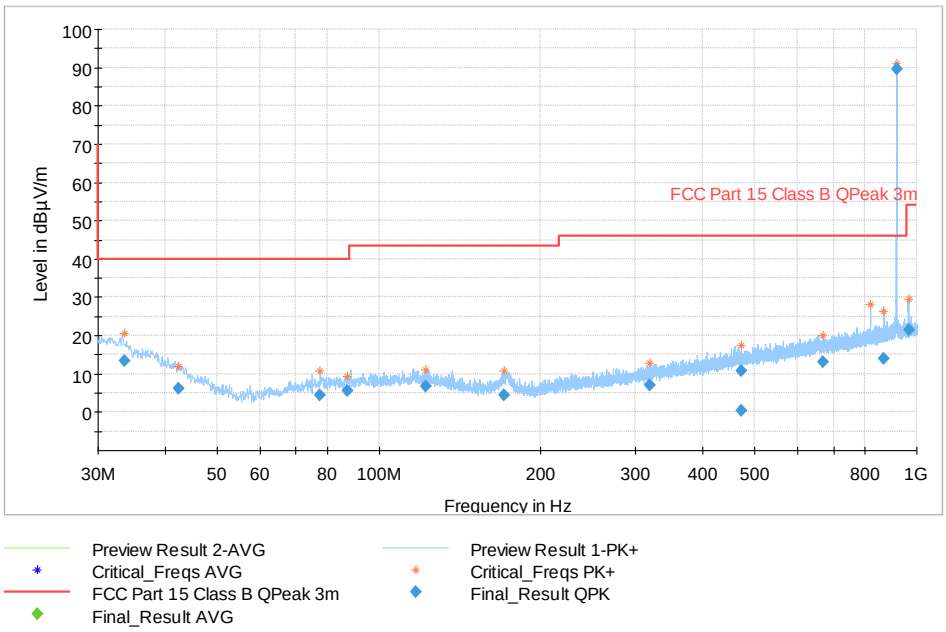
All emissions were greater than 20 dB below the limit.

Test mode condition	Traffic (TX)	
Antenna orientation	Parallel to floor	
Channel frequency	917 MHz	
Sweep frequency	9 kHz – 30 MHz	
Standard	CFR 47 - FCC Part 15 (C) § 15.209	
EUT	A000231818-017	
Ancillary Equipment	N/A	
Test Engineer	Erik Ingemarsson	Date: 2019-09-20
Environmental conditions	Temperature: 18,6 ^{0}C	Humidity: 62,2 %
Chamber details	Chamber: SAC 5	



All emissions were greater than 20 dB below the limit.

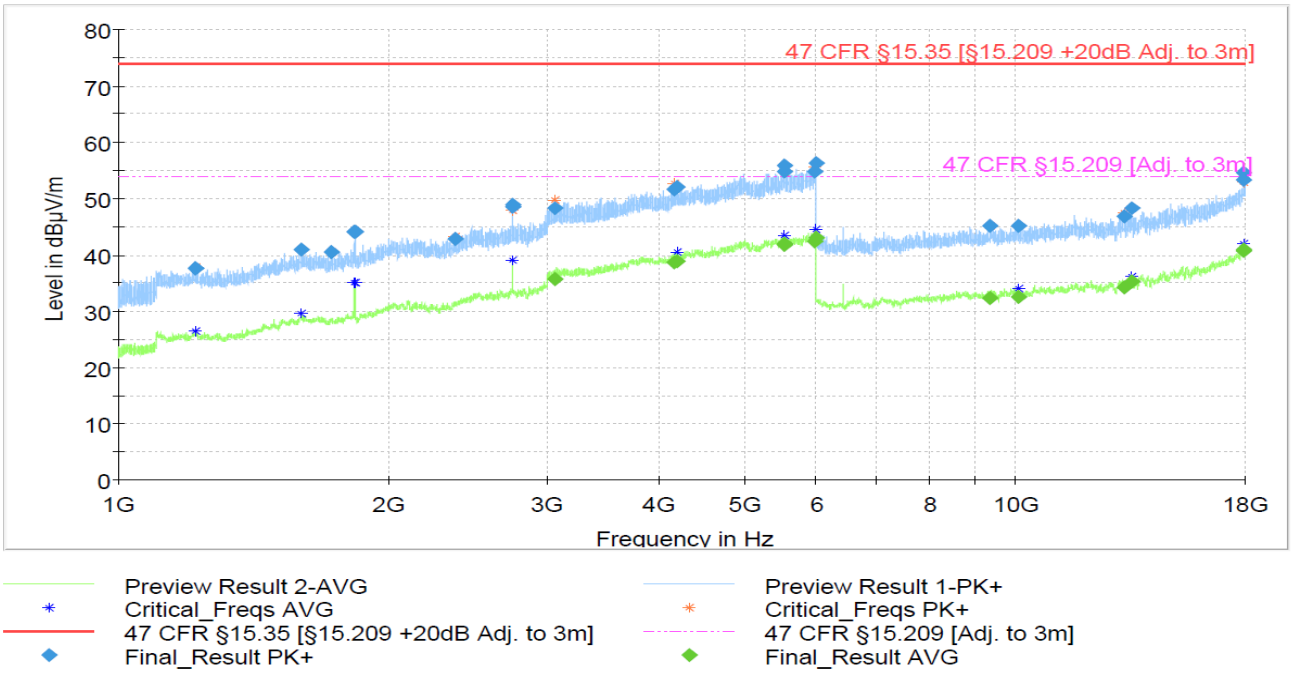
Test mode condition	Traffic (TX)	
Antenna orientation	Horizontal and Vertical	
Channel frequency	917 MHz	
Sweep frequency	30 MHz – 1 GHz	
Standard	CFR 47 - FCC Part 15 (C) § 15.209	
EUT	A000231818-017	
Ancillary Equipment	N/A	
Test Engineer	Erik Ingemarsson	Date: 2019-09-18
Environmental conditions	Temperature: 19,2 ^{0}C	Humidity: 59,5 %
Chamber details	Chamber: SAC 5	



Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
33.56	13.45	40	26.55	1000	120	279	V	228
42.38	6.09	40	33.91	1000	120	280	V	-23
87.46	5.52	40	34.48	1000	120	280	V	292
668.04	13.04	46	32.96	1000	120	100	V	118
868.82	14.04	46	31.96	1000	120	278	H	67
917.18*	89.49	46	-43.49	1000	120	179	H	292
965.18	21.52	54	32.48	1000	120	279	V	157

*Carrier frequency

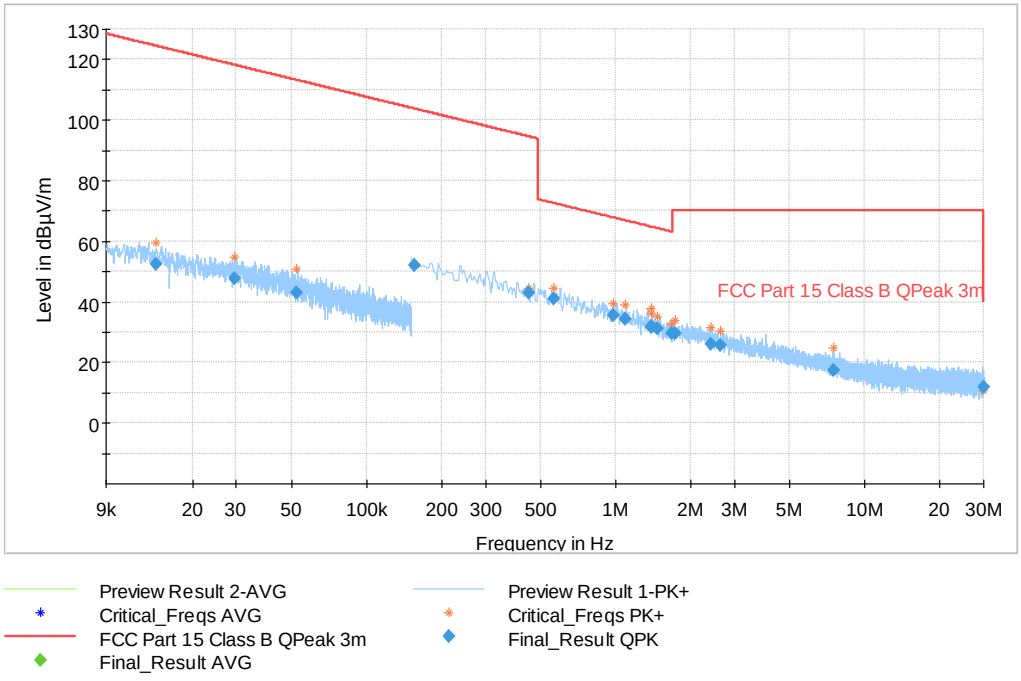
Test mode condition	Traffic (TX)	
Antenna orientation	Horizontal and Vertical	
Channel frequency	917 MHz	
Sweep frequency	1 GHz – 18 GHz	
Standard	CFR 47 - FCC Part 15 (C) § 15.209	
EUT	A000231818-017	
Ancillary Equipment	N/A	
Test Engineer	Niall Forrester	Date: 2019-10-31
Environmental conditions	Temperature: 18,7 ^{0}C	Humidity: 44,3 %
Chamber details	Chamber: SAC 5	



Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
5529.36	---	41.76	53.98	12.22	1000	1000	205	H	85
5531.145	---	41.9	53.98	12.08	1000	1000	115	H	217
5959.069	---	42.43	53.98	11.55	1000	1000	210	H	52
5979.316	---	42.94	53.98	11.04	1000	1000	165	V	262
17952.208	---	40.83	53.98	13.15	1000	1000	115	H	130
17961.15	---	40.94	53.98	13.04	1000	1000	205	H	-5

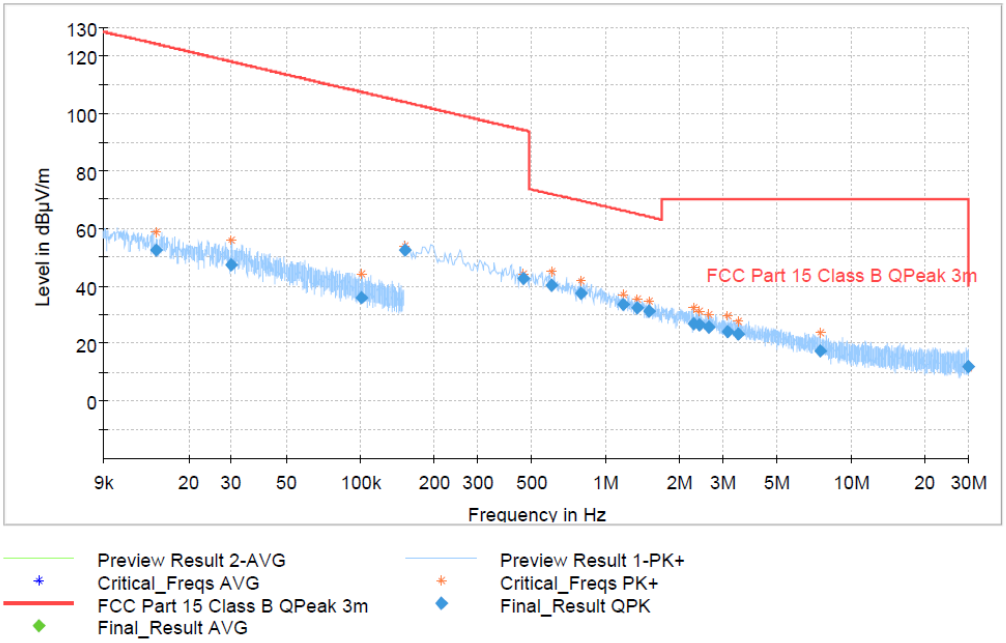
5.3.2 922 MHz proprietary radio frequency

Test mode condition	Traffic (TX)	
Antenna orientation	Perpendicular to axis	
Channel frequency	922 MHz	
Sweep frequency	9 kHz – 30 MHz	
Standard	CFR 47 - FCC Part 15 (C) § 15.209	
EUT	A000231818-017	
Ancillary Equipment	N/A	
Test Engineer	Erik Ingemarsson	Date: 2019-09-26
Environmental conditions	Temperature: 19,2 ^{0}C	Humidity: 45,7 %
Chamber details	Chamber: SAC 5	



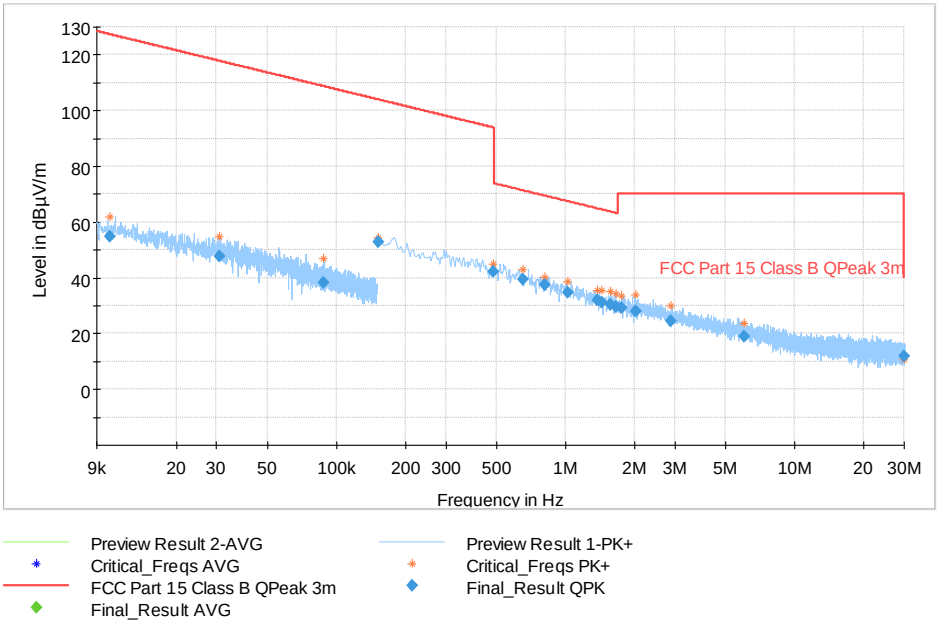
All emissions were greater than 20 dB below the limit.

Test mode condition	Traffic (TX)	
Antenna orientation	Parallel to axis	
Channel frequency	922 MHz	
Sweep frequency	9 kHz – 30 MHz	
Standard	CFR 47 - FCC Part 15 (C) § 15.209	
EUT	A000231818-017	
Ancillary Equipment	N/A	
Test Engineer	Erik Ingemarsson	Date: 2019-09-26
Environmental conditions	Temperature: 19,8 ^{0}C	Humidity: 54,7 %
Chamber details	Chamber: SAC 5	



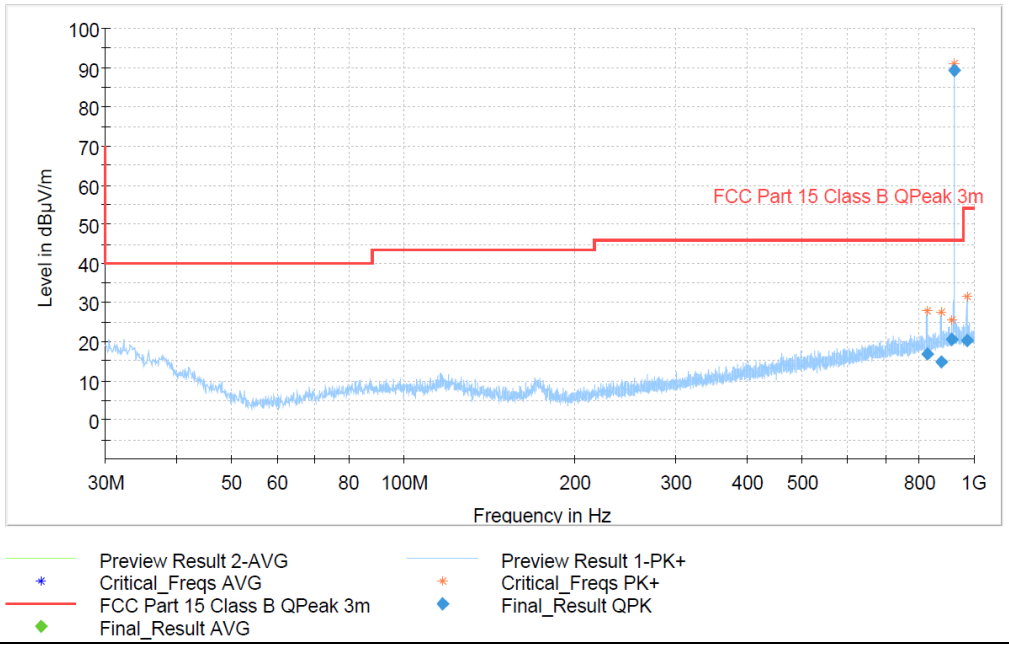
All emissions were greater than 20 dB below the limit.

Test mode condition	Traffic (TX)	
Antenna orientation	Parallel to floor	
Channel frequency	922 MHz	
Sweep frequency	9 kHz – 30 MHz	
Standard	CFR 47 - FCC Part 15 (C) § 15.209	
EUT	A000231818-017	
Ancillary Equipment	N/A	
Test Engineer	Erik Ingemarsson	Date: 2019-09-25
Environmental conditions	Temperature: 19,8 ^{0}C	Humidity: 54,7 %
Chamber details	Chamber: SAC 5	



All emissions were greater than 20 dB below the limit.

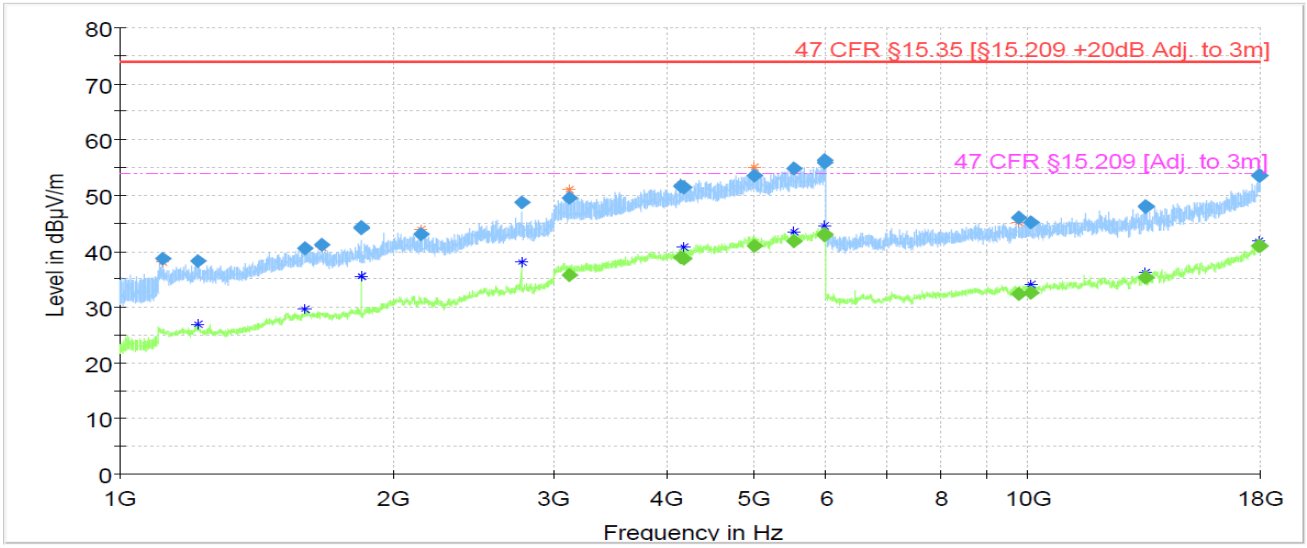
Test mode condition	Traffic (TX)	
Antenna orientation	Horizontal and Vertical	
Channel frequency	922 MHz	
Sweep frequency	30 MHz – 1 GHz	
Standard	CFR 47 - FCC Part 15 (C) § 15.209	
EUT	A000231818-017	
Ancillary Equipment	N/A	
Test Engineer	Erik Ingemarsson	Date: 2019-06-19
Environmental conditions	Temperature: 20,7 ^{0}C	Humidity: 50,2 %
Chamber details	Chamber: SAC 5	



Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
826.20	16.99	46	29.01	1000	120	280	H	135
874.23	14.83	46	31.17	1000	120	278	H	293
914.22	20.71	46	25.29	1000	120	128	H	163
921.82*	89.36	46	-43.36	1000	120	375	H	290
970.20	20.4	54	33.6	1000	120	279	V	225

*Carrier frequency

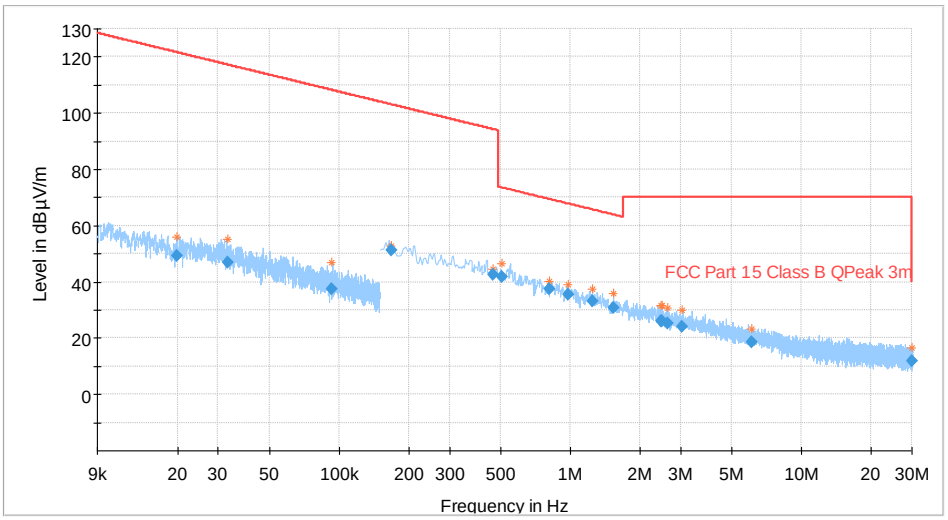
Test mode condition	Traffic (TX)	
Antenna orientation	Horizontal and Vertical	
Channel frequency	922 MHz	
Sweep frequency	1 GHz – 18 GHz	
Standard	CFR 47 - FCC Part 15 (C) § 15.209	
EUT	A000231818-017	
Ancillary Equipment	N/A	
Test Engineer	Niall Forrester	Date: 2019-11-01
Environmental conditions	Temperature: 18,8 ^{0}C	Humidity: 44,6 %
Chamber details	Chamber: SAC 5	



Frequency (MHz)	Average (dBµV/m)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
4983.49	40.91	53.98	13.07	1000	1000	165	H	217.0
5523.722	41.83	53.98	12.15	1000	1000	135	V	130.0
5967.763	42.92	53.98	11.06	1000	1000	100	V	53.0
5975.106	43.04	53.98	10.94	1000	1000	147	H	130.0
17917.711	40.92	53.98	13.06	1000	1000	115	V	175.0
17974.386	41.01	53.98	12.97	1000	1000	210	V	185.0

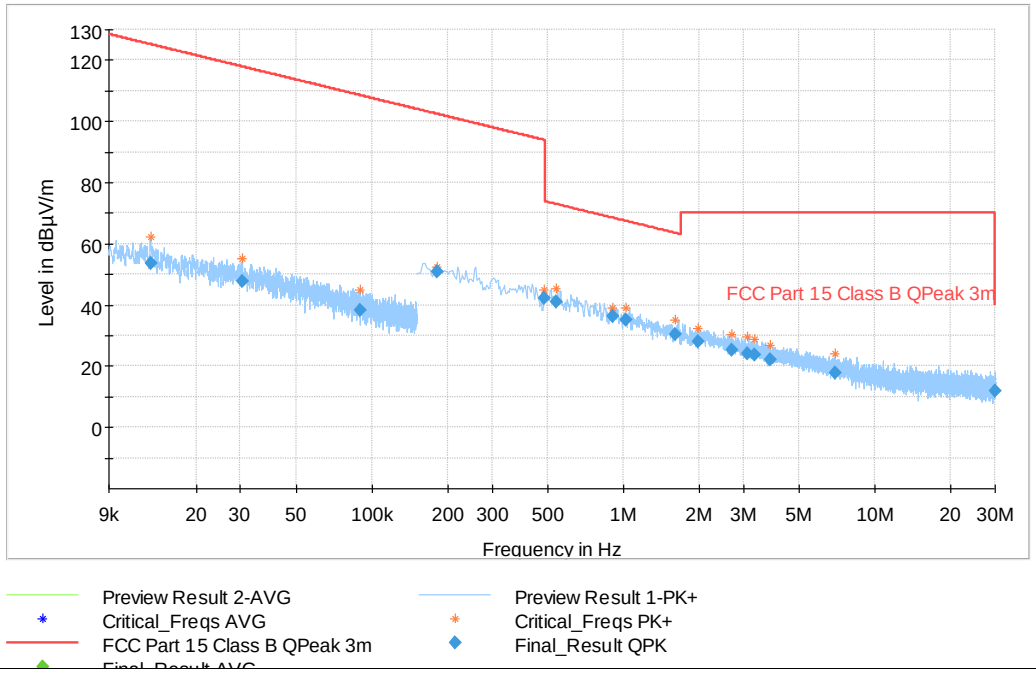
5.3.3 926 MHz proprietary radio frequency

Test mode condition	Traffic (TX)	
Antenna orientation	Perpendicular to axis	
Channel frequency	926 MHz	
Sweep frequency	9 kHz – 30 MHz	
Standard	CFR 47 - FCC Part 15 (C) § 15.209	
EUT	A000231818-017	
Ancillary Equipment	N/A	
Test Engineer	Erik Ingemarsson	Date: 2019-09-26
Environmental conditions	Temperature: 19,2 ^{0}C	Humidity: 45,7 %
Chamber details	Chamber: SAC 5	



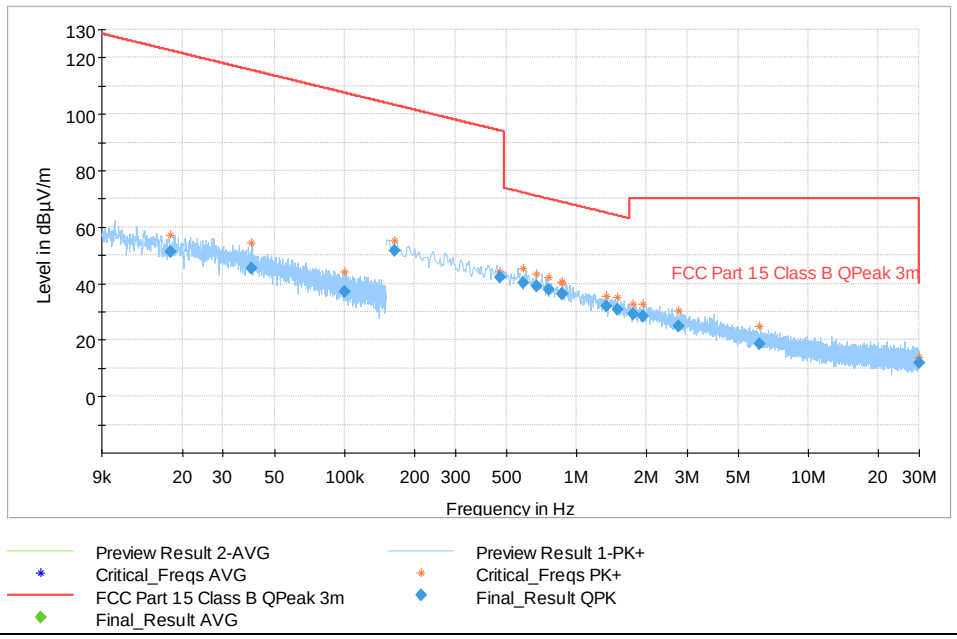
All emissions were greater than 20 dB below the limit.

Test mode condition	Traffic (TX)	
Antenna orientation	Parallel to axis	
Channel frequency	926 MHz	
Sweep frequency	9 kHz – 30 MHz	
Standard	CFR 47 - FCC Part 15 (C) § 15.209	
EUT	A000231818-017	
Ancillary Equipment	N/A	
Test Engineer	Erik Ingemarsson	Date: 2019-09-26
Environmental conditions	Temperature: 19,8 ^{0}C	Humidity: 54,7 %
Chamber details	Chamber: SAC 5	



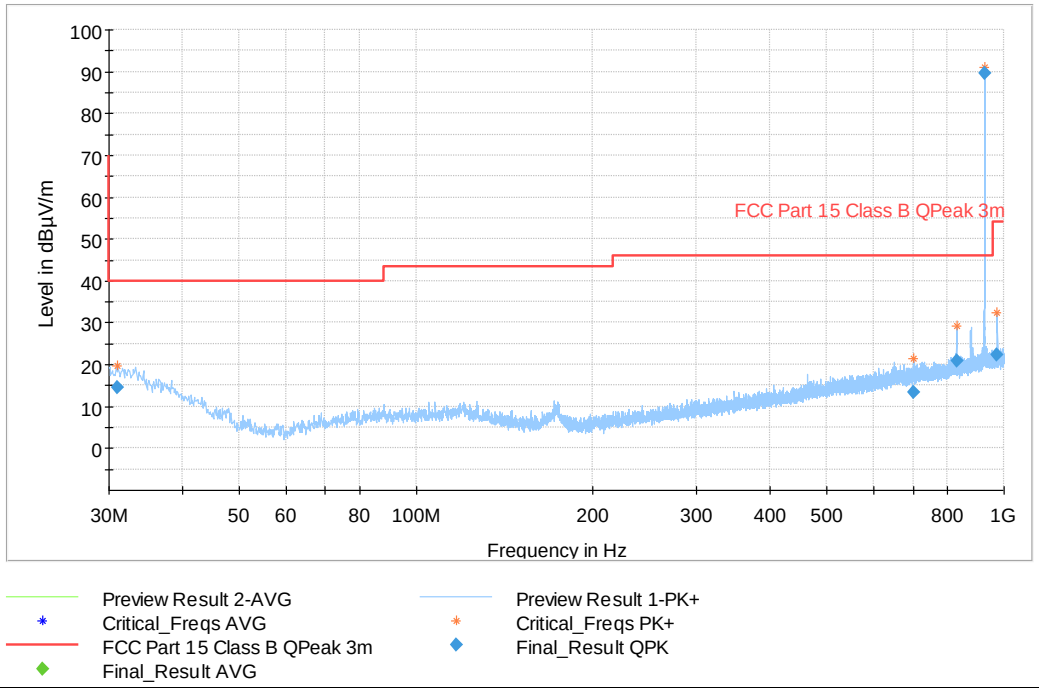
All emissions were greater than 20 dB below the limit.

Test mode condition	Traffic (TX)	
Antenna orientation	Parallel to floor	
Channel frequency	926 MHz	
Sweep frequency	9 kHz – 30 MHz	
Standard	CFR 47 - FCC Part 15 (C) § 15.209	
EUT	A000231818-017	
Ancillary Equipment	N/A	
Test Engineer	Erik Ingemarsson	Date: 2019-09-25
Environmental conditions	Temperature: 18,6 ^{0}C	Humidity: 62,2 %
Chamber details	Chamber: SAC 5	



All emissions were greater than 20 dB below the limit.

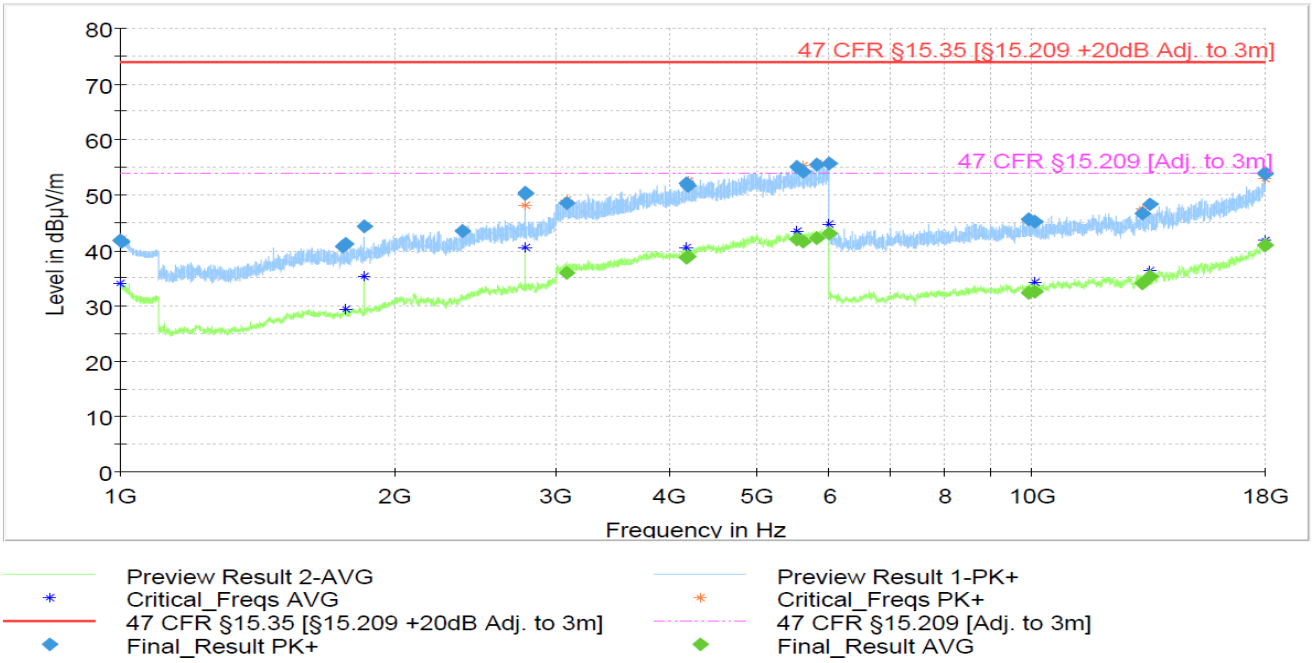
Test mode condition	Traffic (TX)	
Antenna orientation	Horizontal and Vertical	
Channel frequency	926 MHz	
Sweep frequency	30 MHz – 1 GHz	
Standard	CFR 47 - FCC Part 15 (C) § 15.209	
EUT	A000231818-017	
Ancillary Equipment	N/A	
Test Engineer	Erik Ingemarsson	Date: 2019-09-19
Environmental conditions	Temperature: 20,7 ^{0}C	Humidity: 50,2 %
Chamber details	Chamber: SAC 5	



Frequency (MHz)	Quasi peak (dBµV/m)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
31.08	14.4	40	25.6	1000	120	278	V	292
701.09	13.47	46	32.53	1000	120	279	V	292
830.17	20.9	46	25.1	1000	120	280	H	289
925.83*	89.48	46	-43.48	1000	120	175	H	295
973.84	22.33	54	31.67	1000	120	278	V	22

*Carrier frequency

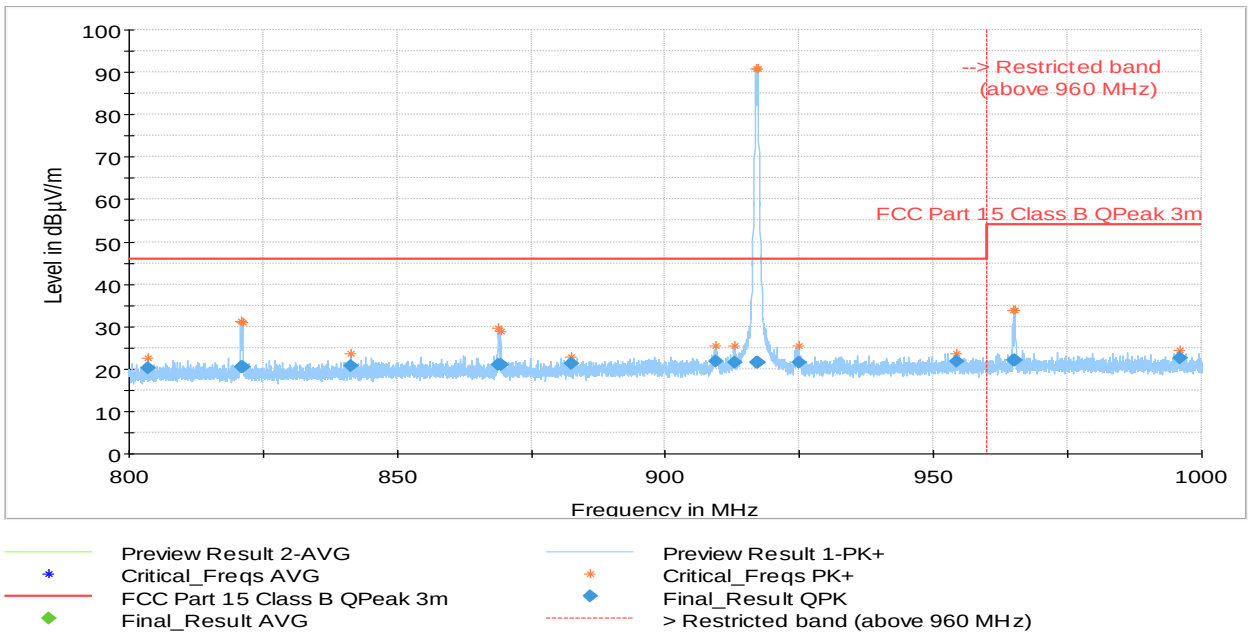
Test mode condition	Traffic (TX)	
Antenna orientation	Horizontal and Vertical	
Channel frequency	926 MHz	
Sweep frequency	1 GHz – 18 GHz	
Standard	CFR 47 - FCC Part 15 (C) § 15.209	
EUT	A000231818-017	
Ancillary Equipment	N/A	
Test Engineer	Niall Forrester	Date: 2019-11-01
Environmental conditions	Temperature: 18,7 ^{0}C	Humidity: 44,6 %
Chamber details	Chamber: SAC 5	



Frequency (MHz)	Average (dBµV/m)	Limit (dBm)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
5528.685	41.91	53.98	12.07	1000	1000	165	V	7.0
5603.813	41.48	53.98	12.5	1000	1000	115	H	130.0
5811.175	42.19	53.98	11.79	1000	1000	205	V	82.0
5982.715	43.01	53.98	10.97	1000	1000	115	H	277.0
17972.674	40.94	53.98	13.04	1000	1000	115	V	50.0
17983.982	40.92	53.98	13.06	1000	1000	109	H	307.0

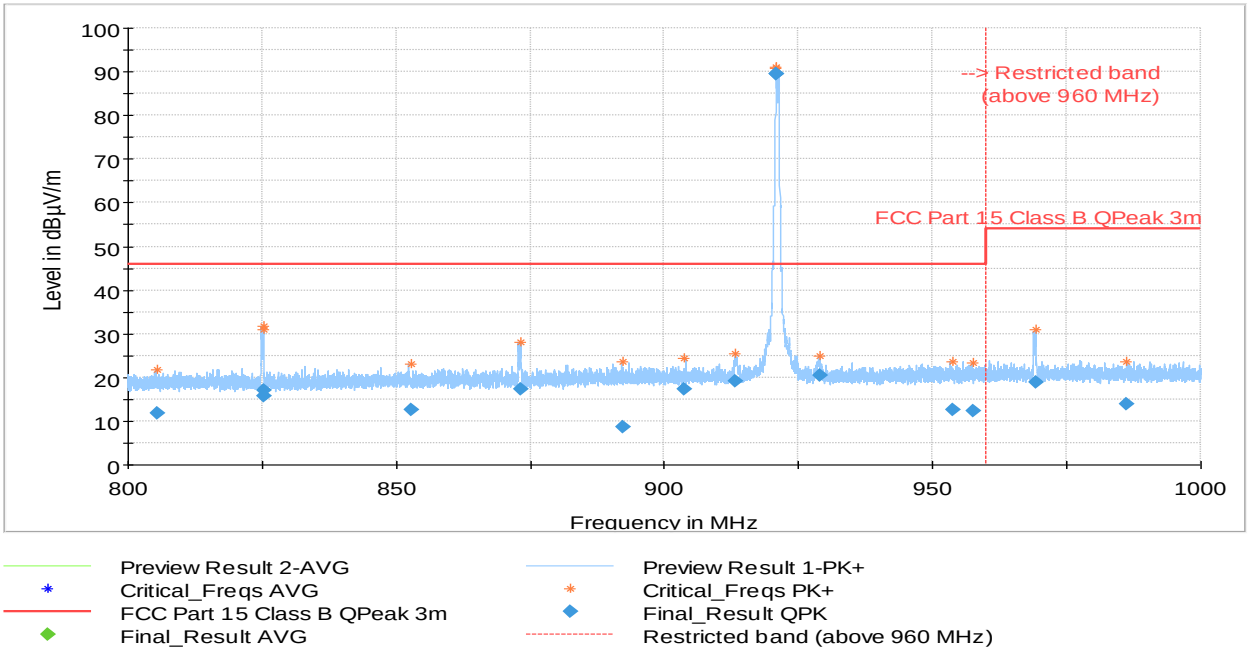
5.4 Test results, Band edge restricted band measurements

Test mode condition	Traffic (TX)	
Antenna orientation	Horizontal and Vertical	
Channel frequency	917 MHz	
Sweep frequency	800 MHz – 1 GHz	
Standard	CFR 47 - FCC Part 15 (C) § 15.209	
EUT	A000231818-017	
Ancillary Equipment	N/A	
Test Engineer	Erik Ingemarsson	Date: 2019-10-02
Environmental conditions	Temperature: 20,0 °C	Humidity: 52,3 %
Chamber details	Chamber: SAC 5	



Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
909.44092	21.66	46	24.34	1000	120	139	H	-9
912.86092	21.51	46	24.49	1000	120	112	V	79
916.92092	21.48	46	24.52	1000	120	389	H	82
917.30092	21.48	46	24.52	1000	120	241	H	127
924.94092	21.5	46	24.5	1000	120	291	V	308
954.26092	21.89	46	24.11	1000	120	290	V	80

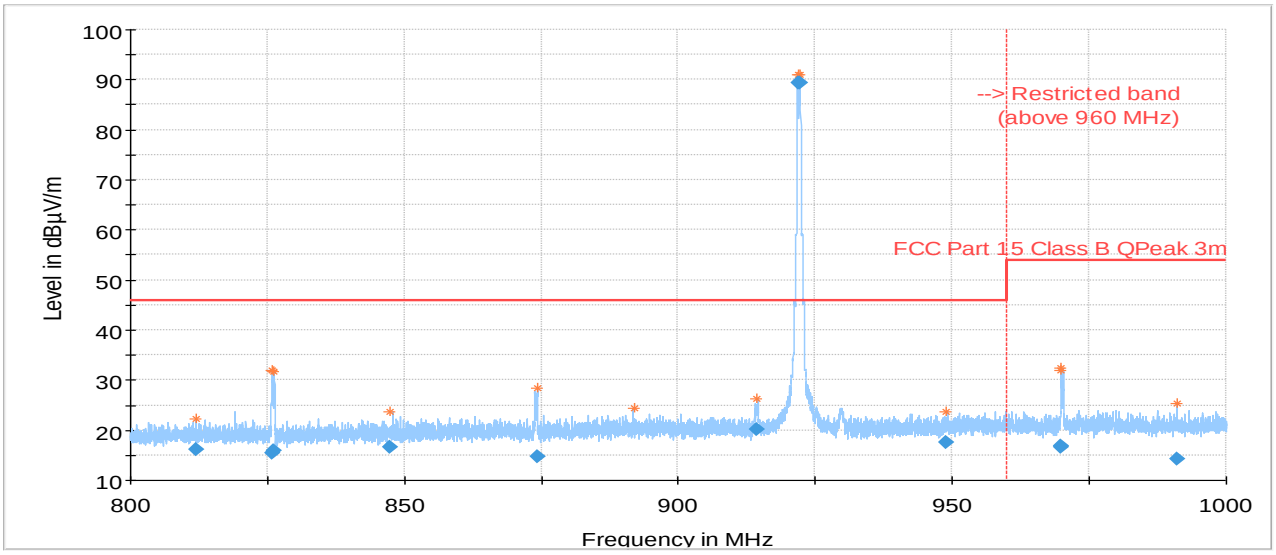
Test mode condition	Traffic (TX)	
Antenna orientation	Horizontal and Vertical	
Channel frequency	921 MHz	
Sweep frequency	800 MHz – 1 GHz	
Standard	CFR 47 - FCC Part 15 (C) § 15.209	
EUT	A000231818-017	
Ancillary Equipment	N/A	
Test Engineer	Erik Ingemarsson	Date: 2019-10-03
Environmental conditions	Temperature: 20,0 ^{0}C	Humidity: 52,3 %
Chamber details	Chamber: SAC 5	



Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
825.17712	15.8	46	30.2	1000	120	279	V	224
825.1826	16.95	46	29.05	1000	120	278	V	247
873.17652	17.27	46	28.73	1000	120	279	V	206
903.72796	17.3	46	28.7	1000	120	279	V	115
913.1802	19.15	46	26.85	1000	120	278	H	224
920.82276*	89.41	46	-43.41	1000	120	229	H	247
920.82464*	89.43	46	-43.43	1000	120	100	H	225
928.8844	20.51	46	25.49	1000	120	278	H	25

*Remark: Carrier frequency

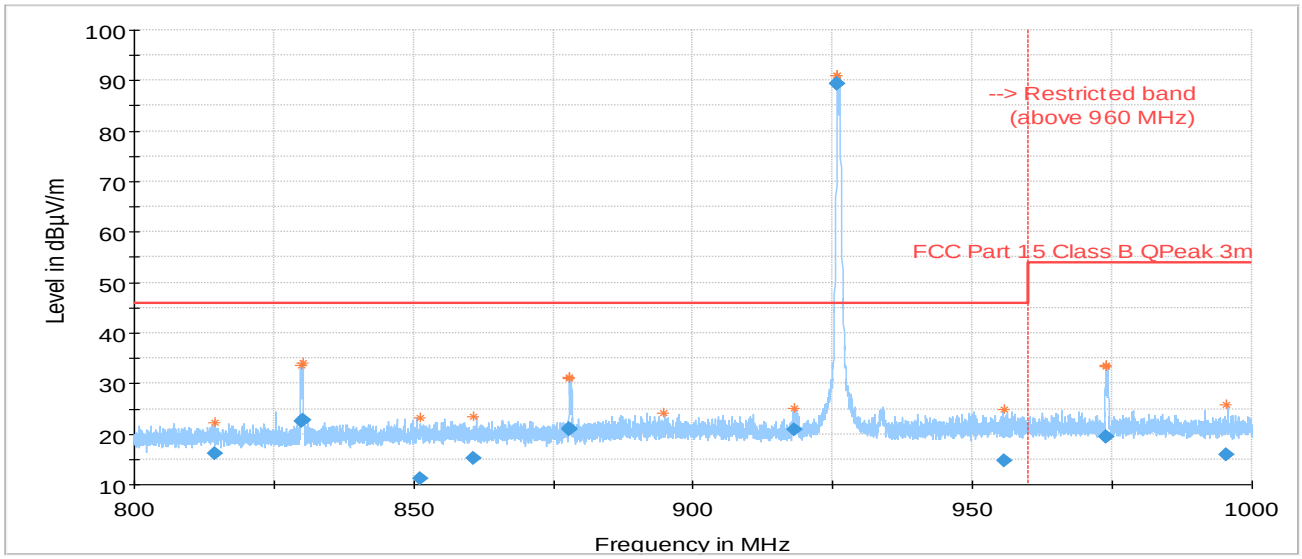
Test mode condition	Traffic (TX)	
Antenna orientation	Horizontal and Vertical	
Channel frequency	922 MHz	
Sweep frequency	800 MHz – 1 GHz	
Standard	CFR 47 - FCC Part 15 (C) § 15.209	
EUT	A000231818-017	
Ancillary Equipment	N/A	
Test Engineer	Erik Ingemarsson	Date: 2019-10-03
Environmental conditions	Temperature: 20,5 ^{0}C	Humidity: 51,1 %
Chamber details	Chamber: SAC 5	



Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
811.83804	16.13	46	29.87	1000	120	278	V	112
825.80052	15.53	46	30.47	1000	120	279	V	224
826.19136	15.96	46	30.04	1000	120	280	V	224
847.27852	16.52	46	29.48	1000	120	130	V	112
914.26968	20.06	46	25.94	1000	120	279	H	224
921.82656 *	89.38	46	-43.38	1000	120	230	H	332
922.1902 *	89.36	46	-43.36	1000	120	379	H	89
948.90804	17.46	46	28.54	1000	120	130	V	112

*Remark: Carrier frequency

Test mode condition	Traffic (TX)	
Antenna orientation	Horizontal and Vertical	
Channel frequency	926 MHz	
Sweep frequency	800 MHz – 1 GHz	
Standard	CFR 47 - FCC Part 15 (C) § 15.209	
EUT	A000231818-017	
Ancillary Equipment	N/A	
Test Engineer	Erik Ingemarsson	Date: 2019-10-03
Environmental conditions	Temperature: 20,5 ^{0}C	Humidity: 51,1 %
Chamber details	Chamber: SAC 5	



Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
814.30752	16.24	46	29.76	1000	120	257	V	295
829.81704	22.48	46	23.52	1000	120	279	H	67
830.19804	22.78	46	23.22	1000	120	279	H	67
877.82464	20.97	46	25.03	1000	120	279	H	112
877.83908	21.13	46	24.87	1000	120	279	H	113
918.12316	20.81	46	25.19	1000	120	278	H	205
925.82456 *	89.41	46	-43.41	1000	120	378	H	292
925.82516 *	89.42	46	-43.42	1000	120	175	H	295

*Remark: Carrier frequency

6 TEST EQUIPMENT LIST

SAC 5 – Radiated emissions						
Type:	**Manufacturer**	**Model**	**Serial Number**	**GTEM ID**	**Calibration date**	**Calibration Due:**
EMI Test Receiver	Rohde & Schwarz	ESU26	100359	2703557	03.07.2019	03.07.2020
Active Loop Antenna	EMCO	6502	9206-2775	2759035	09.07.2019	09.07.2020
Ultra Broadband Antenna	Rohde & Schwarz	HL562E	100988	2823181	23.07.2019	23.07.2021
Double Ridged Waveguide Horn Antenna	Rohde & Schwarz	HF907	102678	2823164	15.07.2019	15.07.2021
Control device	Maturo	NCD	NCD/393/2372.01	2884216	N/A	N/A
Open Switch & Control Unit	Rohde & Schwarz	OSP150	100081	2884198	01.04.2019	01.04.2020
Open Switch & Control Unit	Rohde & Schwarz	OSP120	100084	2761253	01.04.2019	01.04.2020
Shielded Filter Unit	Rohde & Schwarz	OSP-F Extension 1	101333	2761265	01.04.2019	01.04.2020
Shielded Filter Unit	Rohde & Schwarz	OSP-F Extension 2	101335	2761266	01.04.2019	01.04.2020
Shielded Filter Unit	Rohde & Schwarz	OSP-F Base Unit	101330	2761262	01.04.2019	01.04.2020
Humidity Temperature Probe	Rotronic	HF532-DG1XX21X	0061829280	2926379	14.08.2018	14.08.2020

7 MEASUREMENT UNCERTAINTY

Measurement Uncertainty for Radiated Emission (Coverage Factor k=2)	
Parameter	**Uncertainty**
Field Strength 10 Hz -9 kHz	3,38 dB
Field Strength 9 kHz -30 MHz	3,38 dB
Field Strength 30 MHz -1000 MHz	3,38 dB
Field Strength 1 GHz -18 GHz	4,88 dB
Field Strength 18 GHz - 40 GHz	5,14 dB

8 APPENDIX 1 – TEST SETUP PHOTOS

See report 60301233-001 Appendix 1