

Test report for
47 CFR Part 15 Subpart C
15.247 (DSS), 15.209 and 15.207
RSS-247, RSS-Gen



Product name : UI-Joystick stairlift
Applicant : Inspiro B.V.
FCC ID : ZAH-1131445
IC ID : 27285-1131445

Test report No. : P000502007 001 V3.0

Laboratory information

Accreditation

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Testing Location

Test Site	Kiwa Nederland B.V.
Test Site location	Wilmersdorf 50 7327 AC Apeldoorn The Netherlands Tel. +31 88998 3393
Test Site FCC	NL0001
CABID	NL0001

Revision History

Version	Date	Remarks	By
v0.5	16-07-2025	First draft	TK
v1.0	18-07-2025	Initial release	TK
v2.0	24-07-2025	Added power setting	TK
v3.0	01-06-2026	Added context on modification to EUT and removed template page holder on page 12. Updated the ANSI C63.10 version.	TK

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Summary of Test results

FCC	ISED	Description	Section in report	Verdict
15.247(d) 15.209 (a)	RSS-Gen 8.9	Radiated spurious emissions	3.1	Pass
15.205 (a)	RSS Gen 8.10	Spurious emissions in the restricted bands	3.1	Pass
15.247 (a)	RSS-247 5.1(a)	20 dB bandwidth	3.2	Pass
--	RSS-Gen 6.7	99% bandwidth	3.3	Pass
15.247 (b)	RSS-247 5.4 (d)	RF output power	3.4	Pass
15.247 (d)	RSS-247 5.5	Band edge	3.5	Pass
15.247 (a)	RSS-247 5.1(c)	Dwell time	3.6	Pass
15.247 (a)	RSS-247 5.1(b)	Channel separation	3.7	Pass
15.247 (a)	RSS-247 5.1(c)	Number of hopping channels	3.8	Pass

Decision rule: Pass/Fail decisions are based on measurement results without taking into account measurement uncertainty.

1 General Description

1.1 Applicant

Client name:	Inspiro B.V.
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Telephone:	+31263612729
E-mail:	Jeroen.te.paske@inspiro.com
Contact name:	Jeroen te Paske

1.2 Manufacturer

Manufacturer name:	TK Home Solutions B.V
Address:	Van Utrechtweg 99, Netherlands
Zip code:	2921LN Krimpen ad IJssel
Telephone:	+31 (0)180 530 996
E-mail:	paul.kasbergen@tkelevator.com
Contact name:	Paul Kasbergen

1.3 Tested Equipment Under Test (EUT)

Product name:	UI-Joystick stairlift
Brand name:	TK Homesolutions
FCC ID:	ZAH-1131445
IC:	27285-1131445
Product description:	Remote system for calling and sending a chair lift
Variant model(s):	1131445
Batch and/or serial No.	0001
Software version:	RF_Target_Joystick_SW_v10.0.4.hex
Hardware version:	D
Date of receipt:	25-06-2025
Tests started:	03-06-2025
Testing ended:	08-07-2025

1.3.1 Auxiliary items

AUX1

Product name:

Power supply for EUT

Product type:

AC/DC Adaptor

Remarks:

Connects to EUT

1.4 Product specifications of Equipment under test

Tx Frequency:	ISM: 902.3-927.6 MHz
Rx frequency:	ISM: 902.3-927.6 MHz
Occupied channel width:	54.85 kHz
Antenna type:	Internal PCB antenna
Antenna gain:	-2.8 dBi
Type of modulation:	2FSK
Emission designator	54k85 F1D

Disclaimer: The operating frequency bands are declared by the applicant

1.5 Environmental conditions

Normal test conditions:

Temperature (*) : +15°C to +25°C
Relative humidity(*) : 20 % to 75 %

1.6 Measurement standards

- ANSI C63.10:2020
- FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v05r02

1.7 Applicable standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15 Subpart C §15.207
- FCC Part 15 Subpart C §15.209
- FCC Part 15 Subpart C §15.247
- RSS-Gen Issue 5
- RSS-247 Issue 3

1.8 Observation and remarks

This is an update of the TK Homesolution FCC ID: ZAH-1131445. ISED: 27285-1131445.

1.9 Modifications to the EUT (Equipment Under Test)

The EUT is tested with power setting “ 75%”. This is necessary to adhere to the radiated emissions limits. This setting will be implementing by the manufacturer as a permanent, factory-locked software limitation.

1.10 Conclusions

The sample of the product showed **NO NON-COMPLIANCES** to the specifications stated in paragraph 1.7 of this report.

The results of the test as stated in this report, are exclusively applicable to the product items as identified in this report. Kiwa Nederland B.V. accepts no responsibility for any properties of product items in this test report, which are not supported by the tests as specified in paragraph 1.7 *"Applicable standards"*.

All tests are performed by:

Name : Ing. T. Keltjens

Review of test methods and report by:

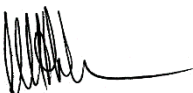
Name : ing. Maaz.H.Khan

The above conclusions have been verified by the following signatory:

Date : 08-06-2026

Name : ing. M.H. Khan

Function : Test Engineer

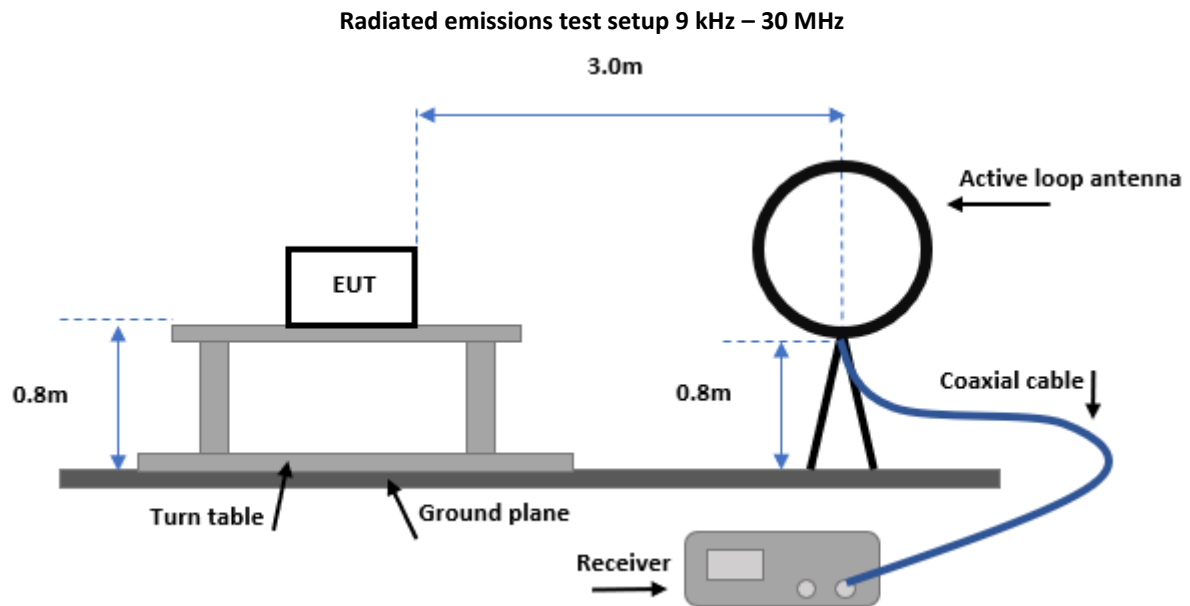
Signature : 

2 Test configuration of the Equipment Under Test

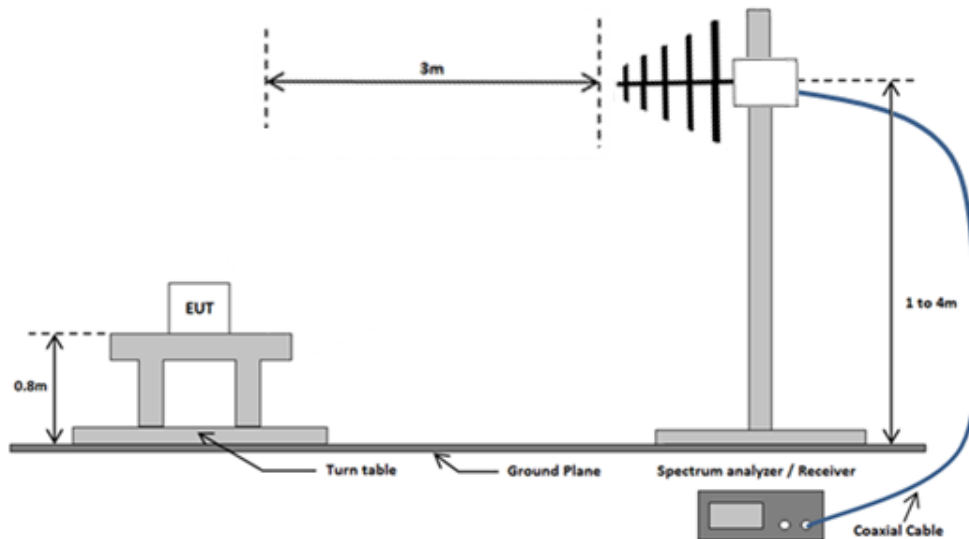
2.1 Test mode

The manufacturer provided a test mode which allowed the product to send on a specific channel at maximum power and a 99% duty cycle.

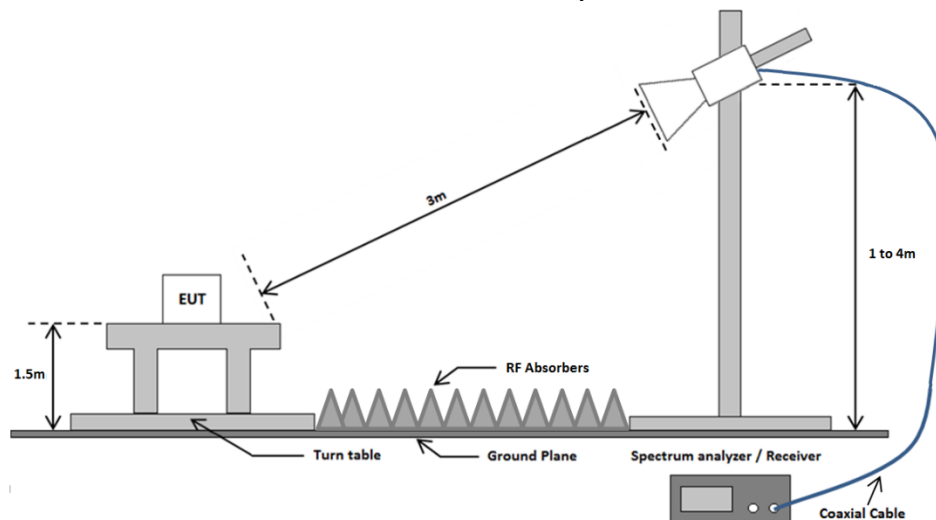
2.2 Test setups



Radiated emissions test setup 30 MHz - 1 GHz



Radiated emissions test setup above 1 GHz



Antenna port conducted tests



List of used cables					
Number	Function	From	To	Length	Remarks
1	x Vdc power	AUX1	EUT	< 3m	-

2.3 Equipment used in the test configuration

Description	Manufacturer	Model	ID	Cal. Done date	Cal. due date	Used at Par.
EMI Receiver	Rohde & Schwarz	ESR7	114605	11-2024	11-2025	3.1
Spectrum Analyzer	Rohde & Schwarz	FSV3044	114923	10-2023	10-2025	3.1
Active loop antenna	EMCO	6502	114515	02-2025	02-2028	3.1
1.1 GHz HPF	Wainwright	WHK1.1/15G-10EF	114679	03-2024	03-2026	3.1
Biconical antenna + 6dB attenuator	EMCO	3146	107818	06-2022	06-2025	3.1
Logperiodic antenna	Schwarzbeck	VULP 9118B	115028	11-2024	11-2027	3.1
Horn antenna	EMCO	3115	114607	01-2025	01-2028	3.1
Preamplifier 1-18 GHz	µComp Nordic	MCNA-40-0010800-25-10P	114771	08-2024	08-2025	3.1
Semi-Anechoic Chamber	ETS Lindgren	SAR	114624	03-2023	03-2026	3.1
Test software	Raditeq	Radimation Version 2023.2.3	--	--	--	3.1

*Note: Standard gain horn antennas do not need calibration

NA= Not Applicable

Description	Manufacturer	Model	ID	Cal. Done date	Cal. due date	Used at Par.
Spectrum analyzer	Rohde & Schwarz	FSV3044	115043	11-2023	11-2025	3.2 – 3.9
Power meter and switch unit	Rohde & Schwarz	OSP220	115042	01-2024	01-2027	3.2 – 3.9
Switch unit	Rohde & Schwarz	OSP150	115041	11-2023	11-2026	3.2 – 3.9
Signal generator	Rohde & Schwarz	SMB100A	115040	11-2023	11-2025	3.2 – 3.9
Vector Signal Generator	Rohde & Schwarz	SMM100A	115039	11-2023	11-2025	3.2 – 3.9

2.4 Sample calculations

All formulas for data conversions and conversion factors are reported in chapter 4 of this test report.

3 Test results

3.1 Radiated spurious emissions

3.1.1 Limit

FCC 15.209(a)

The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field strength (μV/m)	Field strength (dBμV/m)	Measurement distance(m)
0.009 – 0.490	2400/F(kHz)	$20 \cdot \{\log[2400] - \log[F(\text{kHz})]\}$	300*
0.490 – 1.705	24000/F(kHz)	$20 \cdot \{\log[24000] - \log[F(\text{kHz})]\}$	30*
1.705 – 30.0	30	29.5	30*
30 - 88	100	40	3
88 - 216	150	43,5	3
216-960	200	46	3
Above 960	500	54	3

*Note: Measured values in the plots 9 kHz to 30 MHz corrected to 30m or 300m limit distance according to the method described in ANSI C63.10-2013, clause 6.4

RSS-GEN

The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Magnetic field strength (H-Field) (μA/m)	Magnetic field strength (H-Field) (dBμA/m)	Field strength (μV/m)	Field strength (dBμV/m)	Measurement distance(m)
0.009 – 0.490	6.37/F (kHz)	$20 \cdot \{\log[6.37] - \log[F(\text{kHz})]\}$	N.A.	$20 \cdot \{\log[6.37] - \log[F(\text{kHz})]\} + 51.5$	300*
0.490 – 1.705	63.7/F (kHz)	$20 \cdot \{\log[63.7] - \log[F(\text{kHz})]\}$	N.A.	$20 \cdot \{\log[63.7] - \log[F(\text{kHz})]\} + 51.5$	30*
1.705 - 30	0.08	-21.9	N.A.	29.6	30*
30 - 88	N.A.	N.A.	100	40	3
88 - 216	N.A.	N.A.	150	43,5	3
216-960	N.A.	N.A.	200	46	3
Above 960	N.A.	N.A.	500	54	3

*Note: Measured values in the plots 9 kHz to 30 MHz corrected to 30m or 300m limit distance according to the method described in ANSI C63.10-2013, clause 6.4.

3.1.2 Measurement instruments

The measurement instruments are listed in chapter 2.3 of this report.

3.1.3 Test setup

The test setup is as shown in chapter 2.2 of this report.

3.1.4 Test procedure

9 kHz – 30 MHz: According to ANSI C63.10-2013, section 6.4

30 MHz to 26.5 GHz: According to ANSI C63.10-2013, section 6.5 and 6.6

9 kHz to 30 MHz: IRN 441 – Method 10

30 MHz to 1 GHz: IRN 441 – Method 1

1 GHz to 18 GHz: IRN 441– Method 2

In case of handheld and/or body-worn equipment, the EUT's orientation (X, Y, Z) was varied in order to ensure that maximum emission amplitudes were attained. In all other cases the associated cabling and the EUT orientation was varied for maximum emissions.

The spectrum was examined from 0.009 MHz to 10 times X GHz, not more than the 10th harmonic of the highest intentional generated frequency (X GHz). Final radiated emission measurements were made at 3m distance.

The 6 highest emission amplitudes relative to the appropriate limit were recorded in this report. Field strength values of radiated emissions at frequencies not listed in the tables are more than 20 dB below the applicable limit.

3.1.5 Measurement Uncertainty

Frequency range	Polarization	Uncertainty
9 kHz – 30 MHz	--	±1.6 dB
30 – 200 MHz	Horizontal	±4.5 dB
	Vertical	±5.4 dB
200 -1000 MHz	Horizontal	±3.6 dB
	Vertical	±4.6 dB
1 – 18 GHz	Horizontal	±5.7 dB
	Vertical	±5.7 dB

3.1.6 Test results

Low channel 30 MHz – 250 MHz

Peak number	Frequency (MHz)	Peak (dBμV/m)	Quasi-Peak (dBμV/m)	Quasi-Peak Limit (dBμV/m)	Angle (°)	Height (m)	Polarization
1	39.39	30	18.7	40	122	1.5	Vertical
2	41.833	31.7	24	40	184	1	Vertical
3	76.852	26.5	20.1	40	337	1.3	Vertical
4	36.447	31.6	15.8	40	122	1.5	Vertical
5	33.942	29.6	16.4	40	122	1.5	Vertical

Middle channel 30 MHz – 250 MHz

Peak number	Frequency (MHz)	Peak (dBμV/m)	Quasi-Peak (dBμV/m)	Quasi-Peak Limit (dBμV/m)	Angle (°)	Height (m)	Polarization
1	64.523	31.3	13.1	40	133	1.8	Vertical
2	41.271	31.1	23.9	40	25	1	Vertical

High channel 30 MHz – 250 MHz

Peak number	Frequency (MHz)	Peak (dBμV/m)	Quasi-Peak (dBμV/m)	Quasi-Peak Limit (dBμV/m)	Angle (°)	Height (m)	Polarization
1	41.764	31.6	24	40	238	1	Vertical
2	187.514	32	25.3	43.5	360	2.5	Horizontal
3	33.149	27.4	16.8	40	20	3.2	Vertical

Low channel 250 MHz-1 GHz

Peak number	Frequency (MHz)	Peak (dBμV/m)	Angle (°)	Height (m)	Polarization
1	902.313	107.3	18	1	Horizontal

Transmitter frequency

Middle channel 250 MHz – 1GHz

Peak number	Frequency (MHz)	Peak (dBμV/m)	Angle (°)	Height (m)	Polarization
1	914.696	108.7	185	1.5	Horizontal

Transmitter frequency

High channel 250 MHz – 1GHz

Peak number	Frequency (MHz)	Peak (dBμV/m)	Angle (°)	Height (m)	Polarization
1	927.625	109.3	133	1.5	Horizontal

Transmitter frequency

Low channel 1 GHz-18 GHz

Peak number	Frequency (GHz)	Peak (dBμV/m)	Peak Limit (dBμV/m)	Average (dBμV/m)	Average Limit (dBμV/m)	Angle (°)	Height (m)	Polarization
1	7.217	57.4	74	52.6	54	172	1.25	Horizontal
2	2.707	53.9	74	52.1	54	70	2.75	Vertical
3	1.804	51.9	74	50.2	54	182	1	Vertical
4	2.707	48.9	74	45.3	54	81	1.5	Horizontal
5	1.804	50.1	74	47.9	54	121	1.25	Horizontal

Middle channel 1 GHz-18 GHz

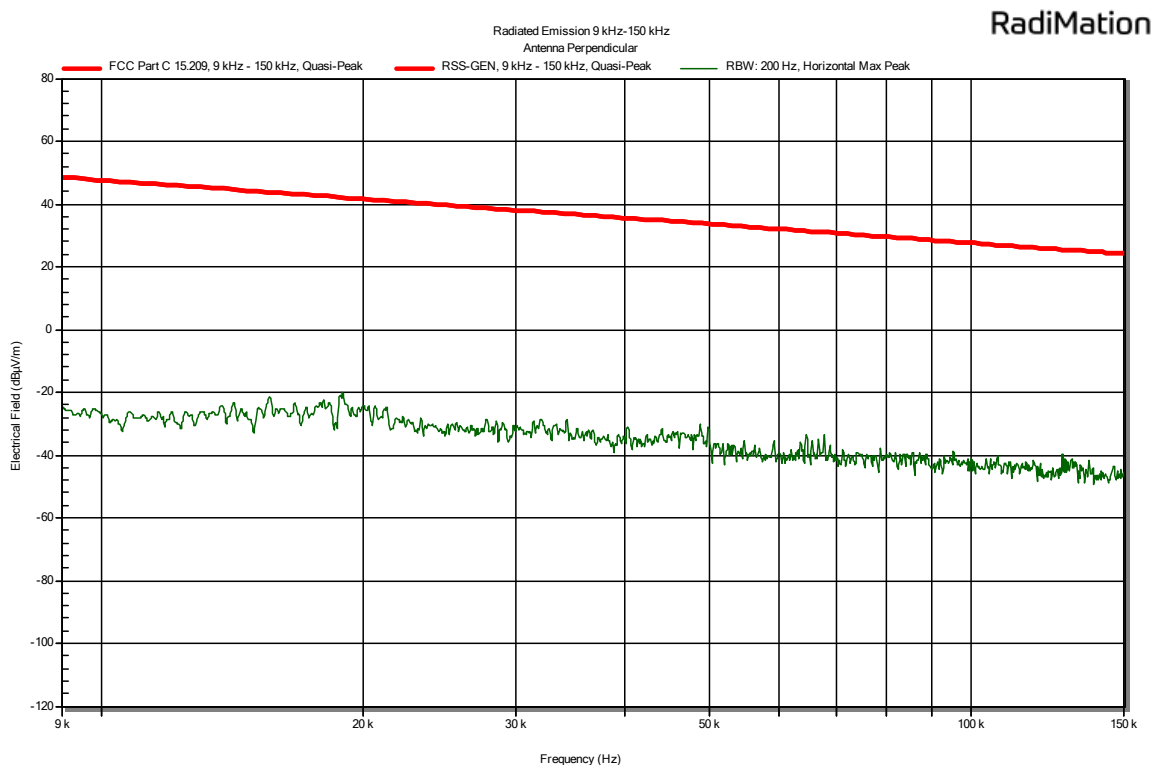
Peak number	Frequency (GHz)	Peak (dB μ V/m)	Peak Limit (dB μ V/m)	Average (dB μ V/m)	Average Limit (dB μ V/m)	Angle (°)	Height (m)	Polarization
1	1.83	52.7	74	51.2	54	124	3	Vertical
2	2.745	55.4	74	53.8	54	77	2.75	Vertical
3	7.319	56.2	74	50.4	54	178	1	Horizontal
4	2.745	48.8	74	44.7	54	122	3.25	Horizontal
5	1.83	48.4	74	45.7	54	239	2.75	Horizontal

High channel 1 GHz-18 GHz

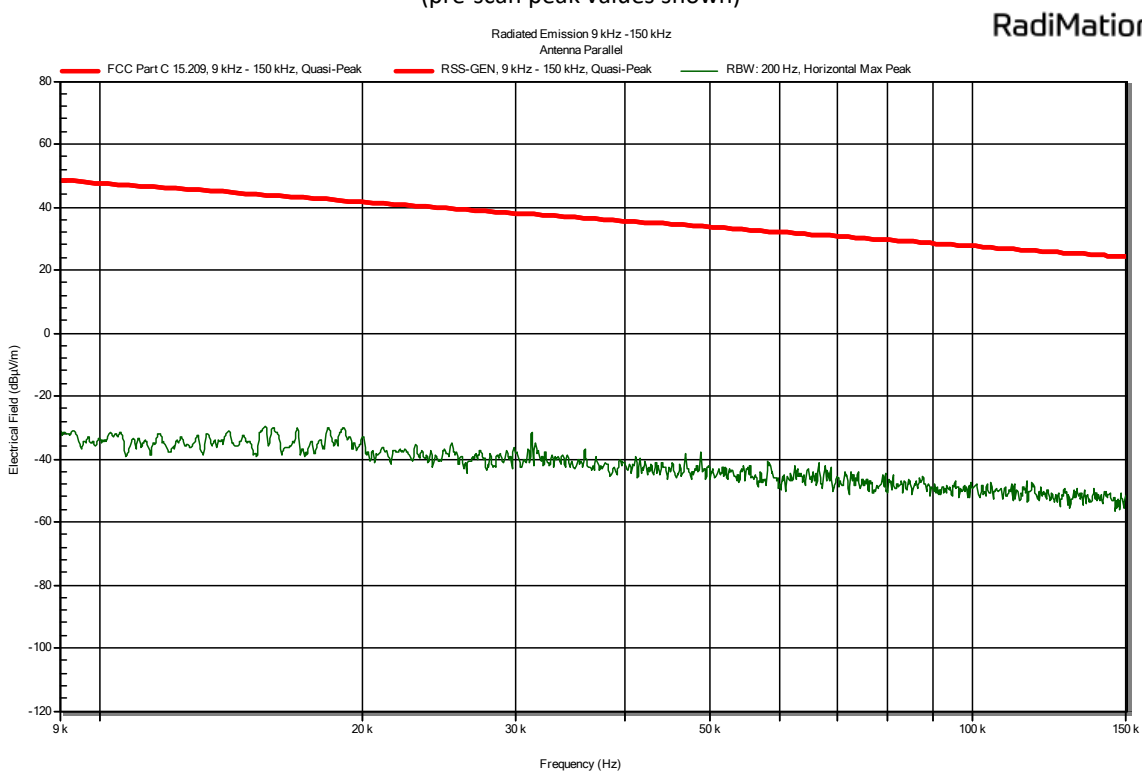
Peak number	Frequency (GHz)	Peak (dB μ V/m)	Peak Limit (dB μ V/m)	Average (dB μ V/m)	Average Limit (dB μ V/m)	Angle (°)	Height (m)	Polarization
1	2.783	53.8	74	52.1	54	78	4	Vertical
2	1.855	54.7	74	53.1	54	182	1	Vertical
3	3.71	50.3	74	44.5	54	239	2.25	Vertical
4	2.783	50.6	74	47.7	54	17	2.25	Horizontal

The results of the radiated emission tests are depicted in the table above. A selection of plots is provided on the next pages.

3.1.7 Plots of the Radiated Spurious Emissions Measurement

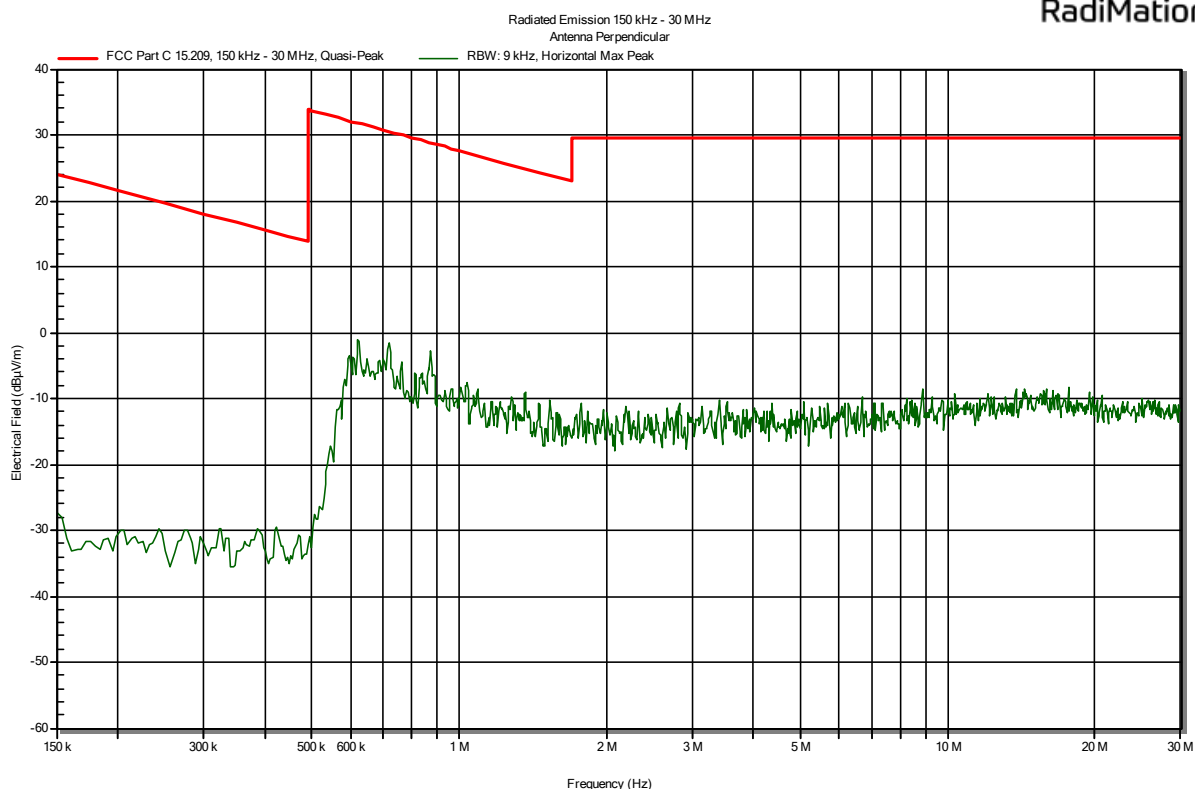


Plot 1a: radiated emissions of the EUT, Antenna perpendicular, in the range 9 – 150kHz
(pre-scan peak values shown)



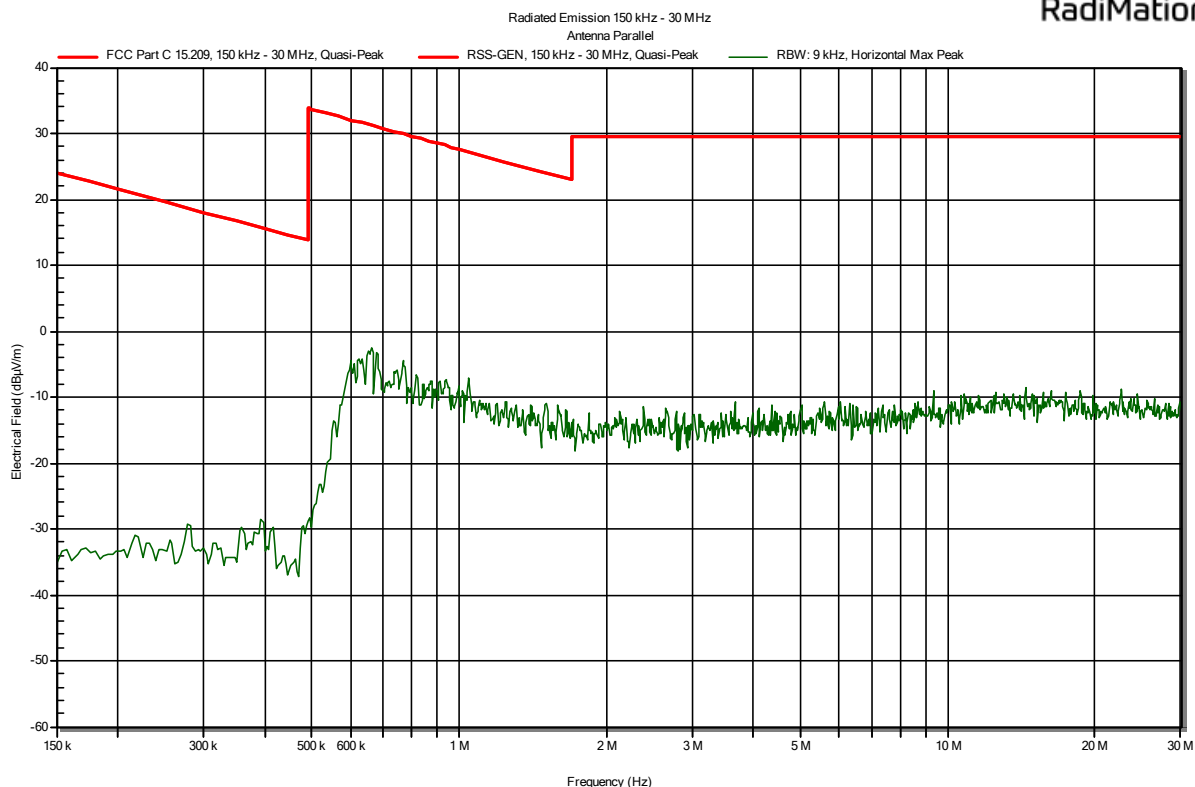
Plot 1b: radiated emissions of the EUT, Antenna parallel, in the range 9 – 150kHz
(pre-scan peak values shown)

RadiMation

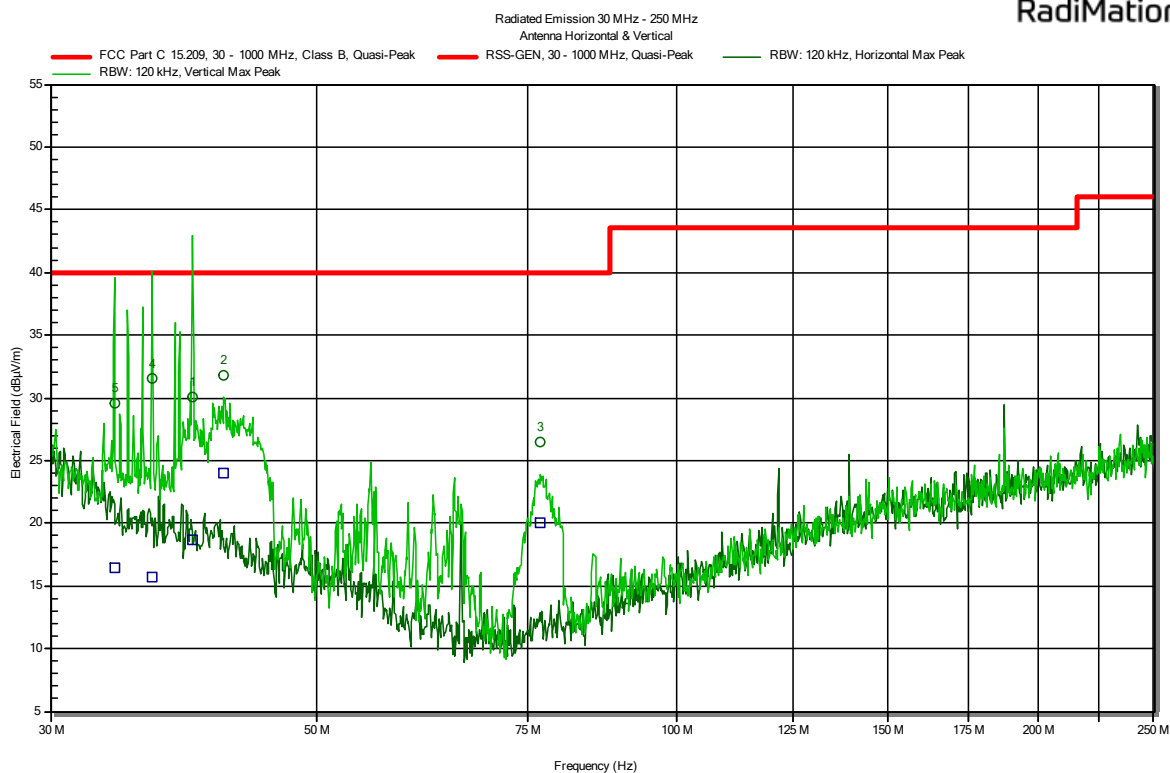


Plot 2a: radiated emissions of the EUT, Antenna perpendicular, in the range 150KHz-30 MHz
(pre-scan peak values shown)

RadiMation

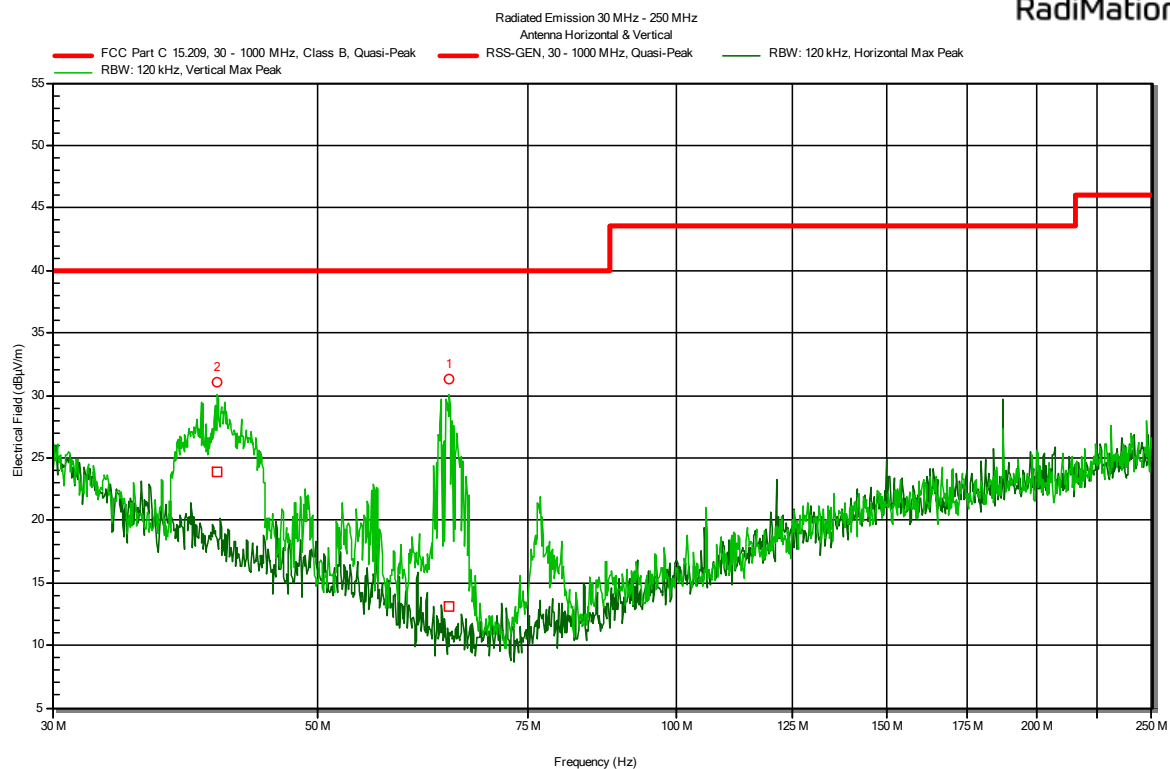


Plot 2b: radiated emissions of the EUT, Antenna parallel, in the range 150KHz-30 MHz
(pre-scan peak values shown)



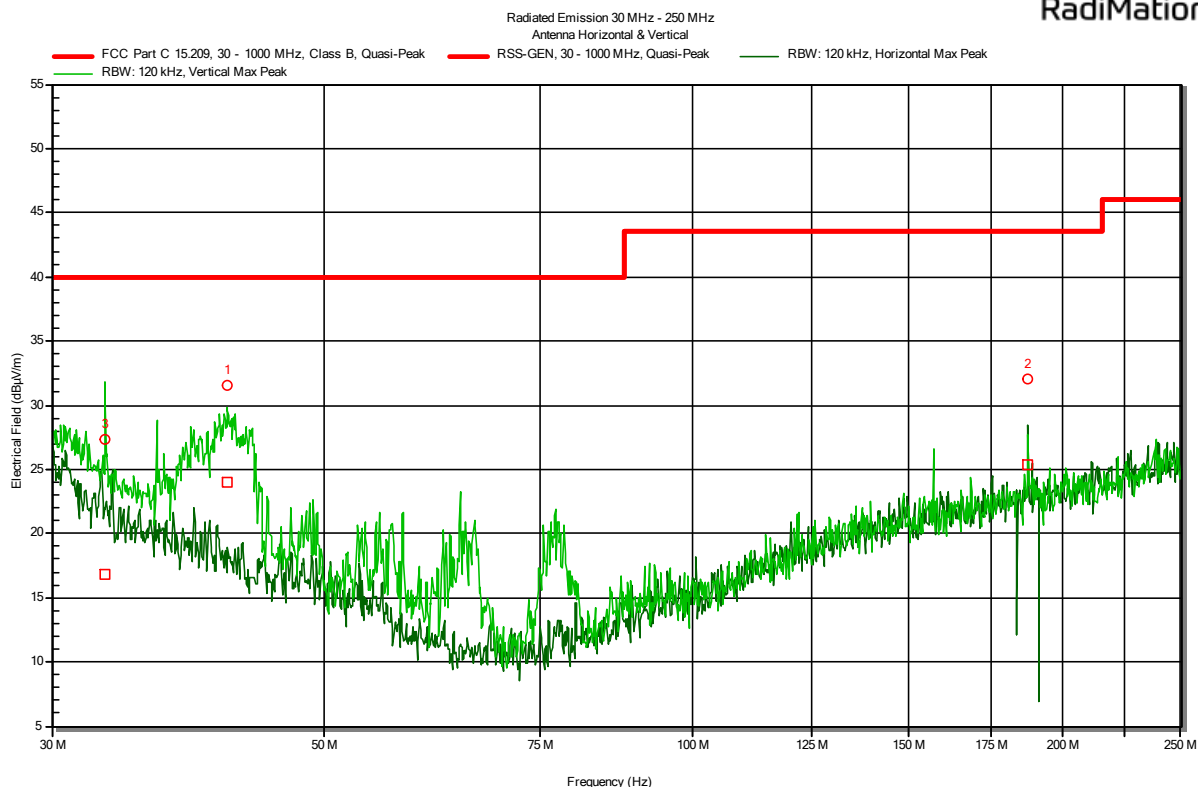
Plot 3a: radiated emissions of the EUT in the range 30 – 250 MHz
(pre-scan peak values shown)

Low channel

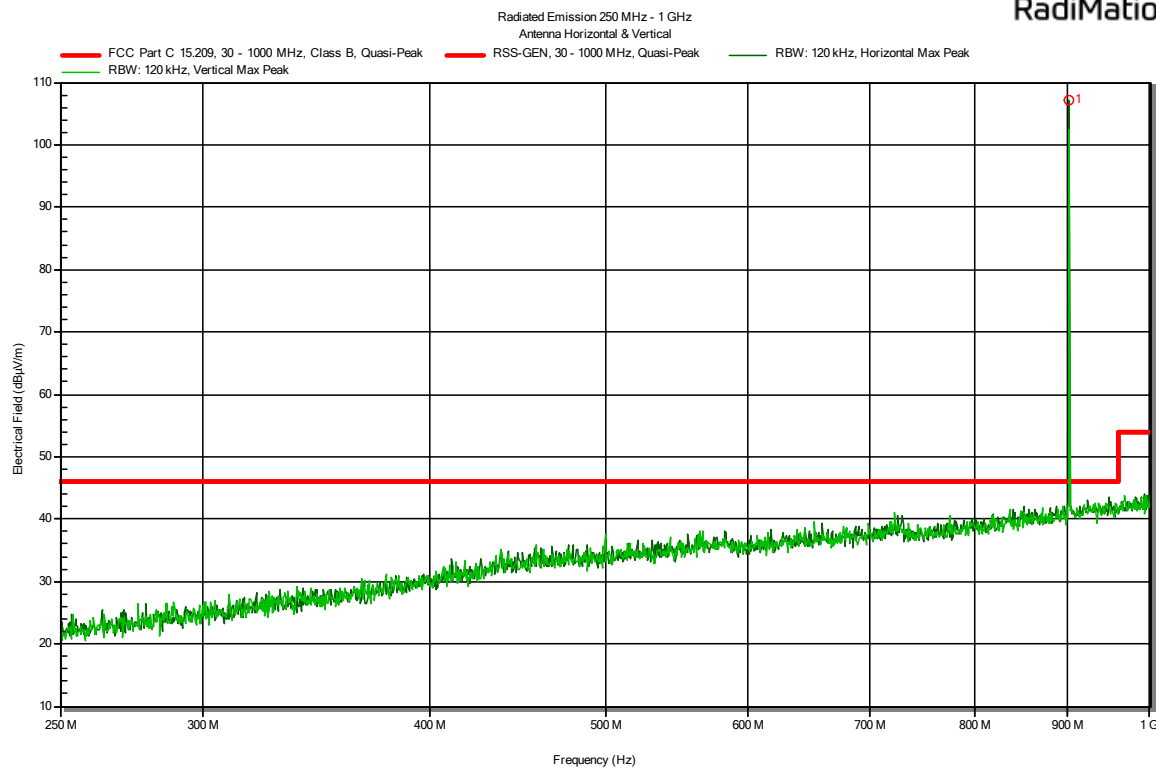


Plot 3b: radiated emissions of the EUT in the range 30 – 250 MHz
(pre-scan peak values shown)

Middle channel

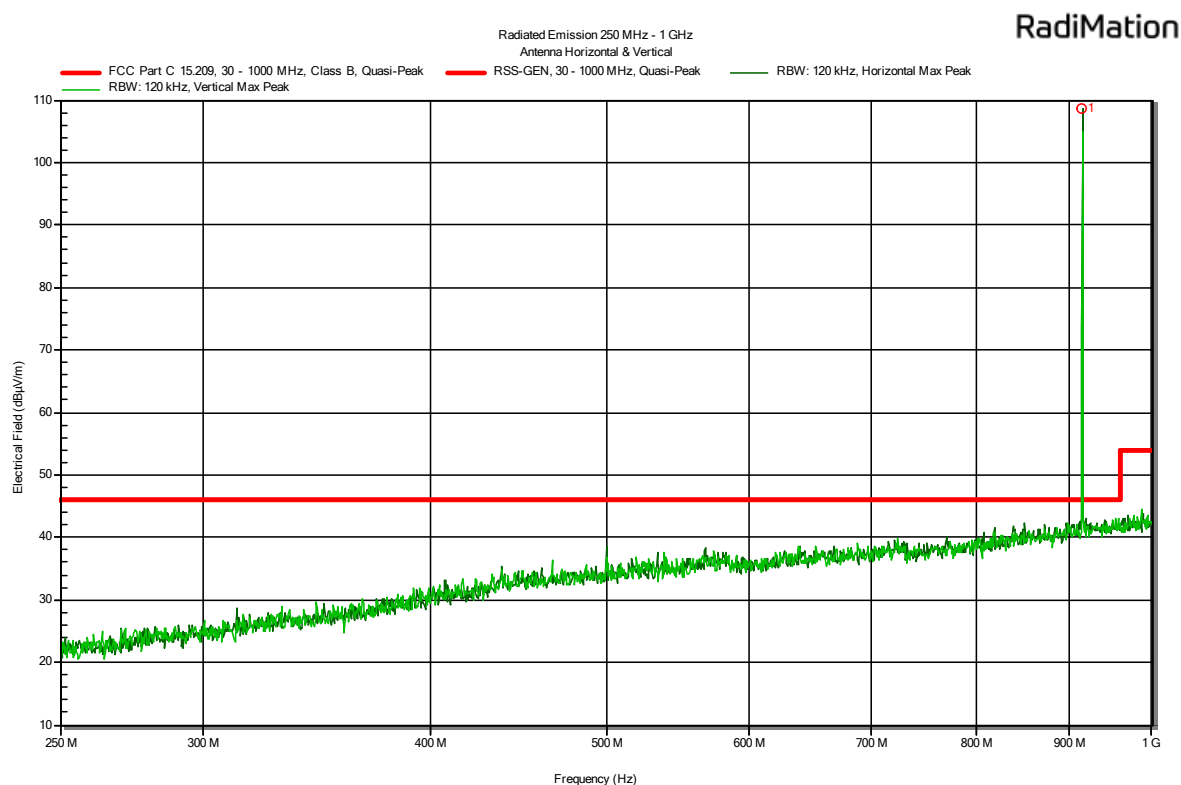


Plot 3c: radiated emissions of the EUT in the range 30 – 250 MHz
(pre-scan peak values shown) High channel



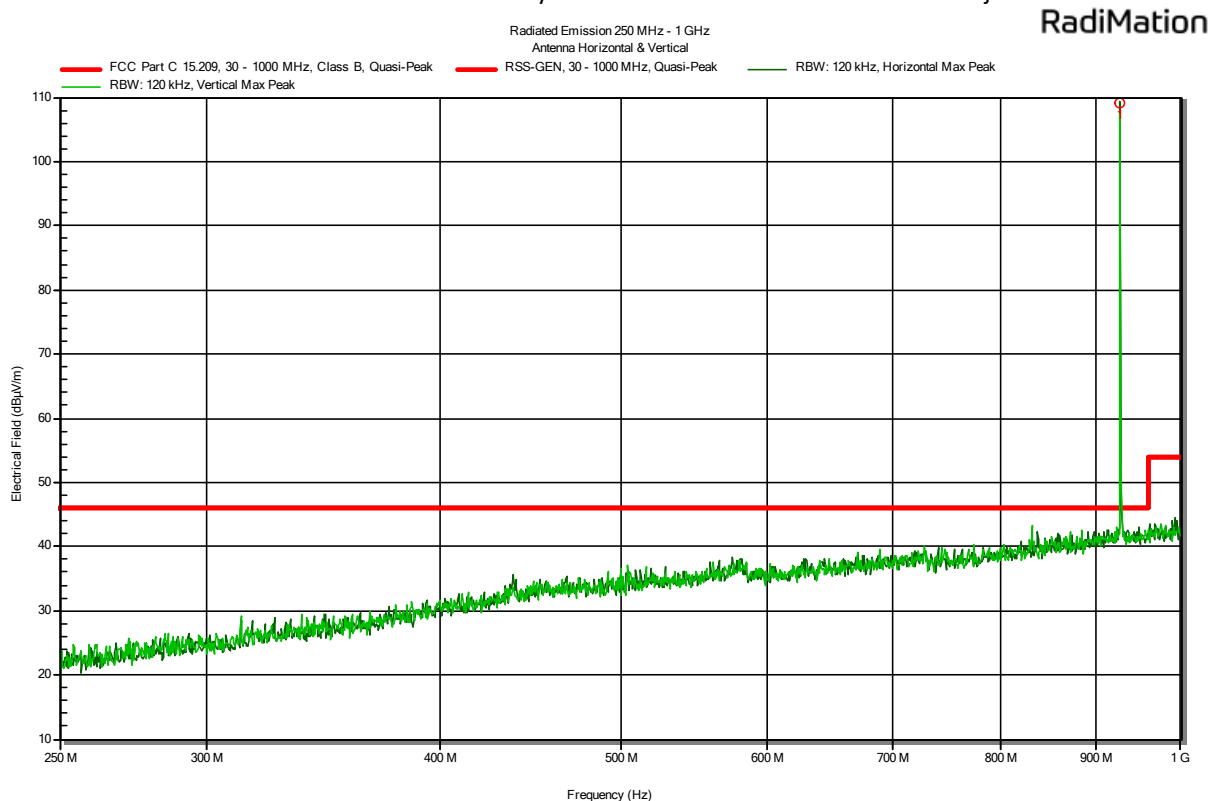
Plot 4a: radiated emissions of the EUT in the range 250-1000 MHz
(pre-scan peak values shown) Low channel

Note: Peaks between 902-928MHz are caused by the radio transmission and thus not subject to the limit line.



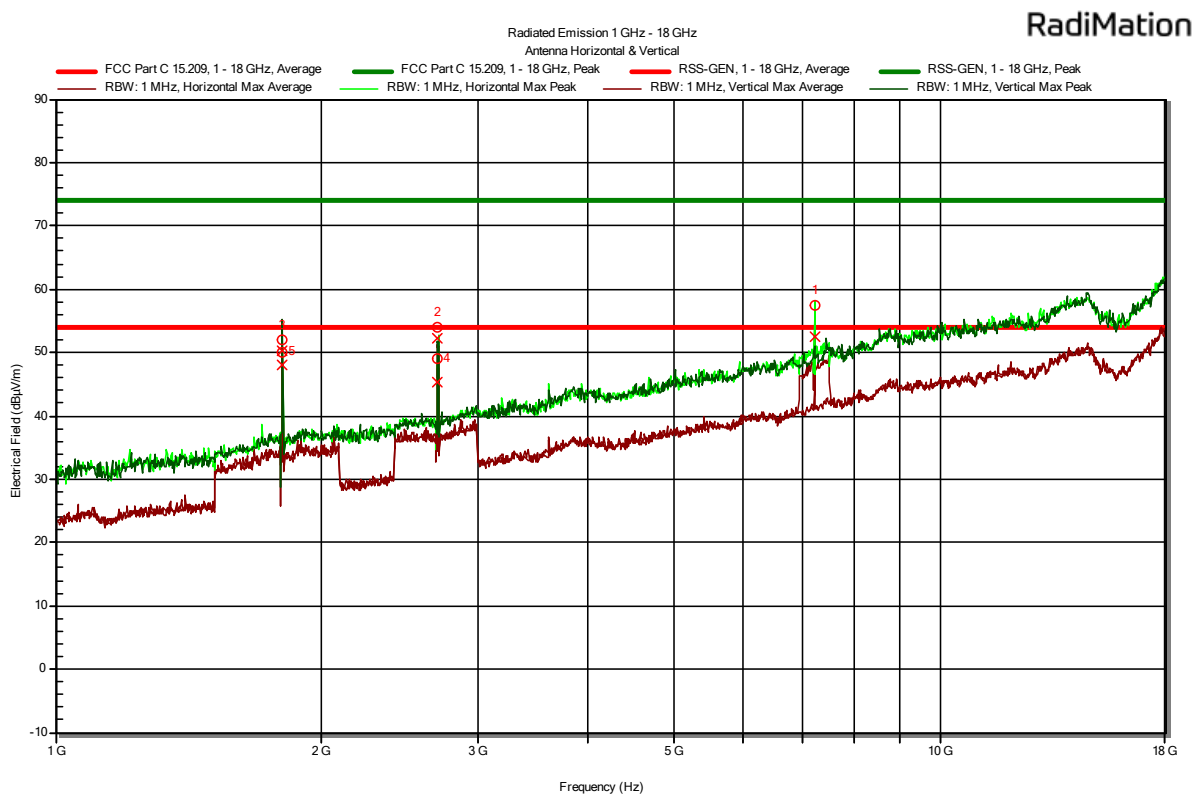
Plot 4b: radiated emissions of the EUT in the range 250-1000 MHz
(pre-scan peak values shown) Middle channel

Note: Peaks between 902-928MHz are caused by the radio transmission and thus not subject to the limit line.

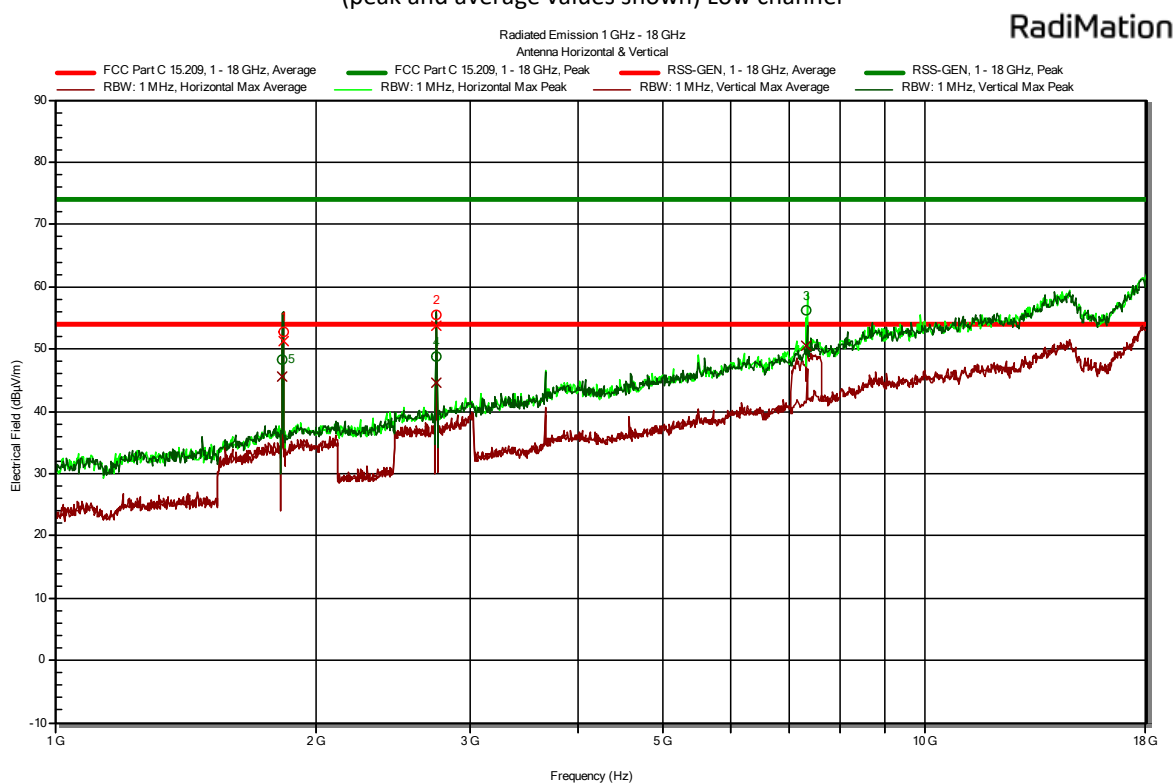


Plot 4c: radiated emissions of the EUT in the range 250-1000 MHz
(pre-scan peak values shown) High channel

Note: Peaks between 902-928MHz are caused by the radio transmission and thus not subject to the limit line.

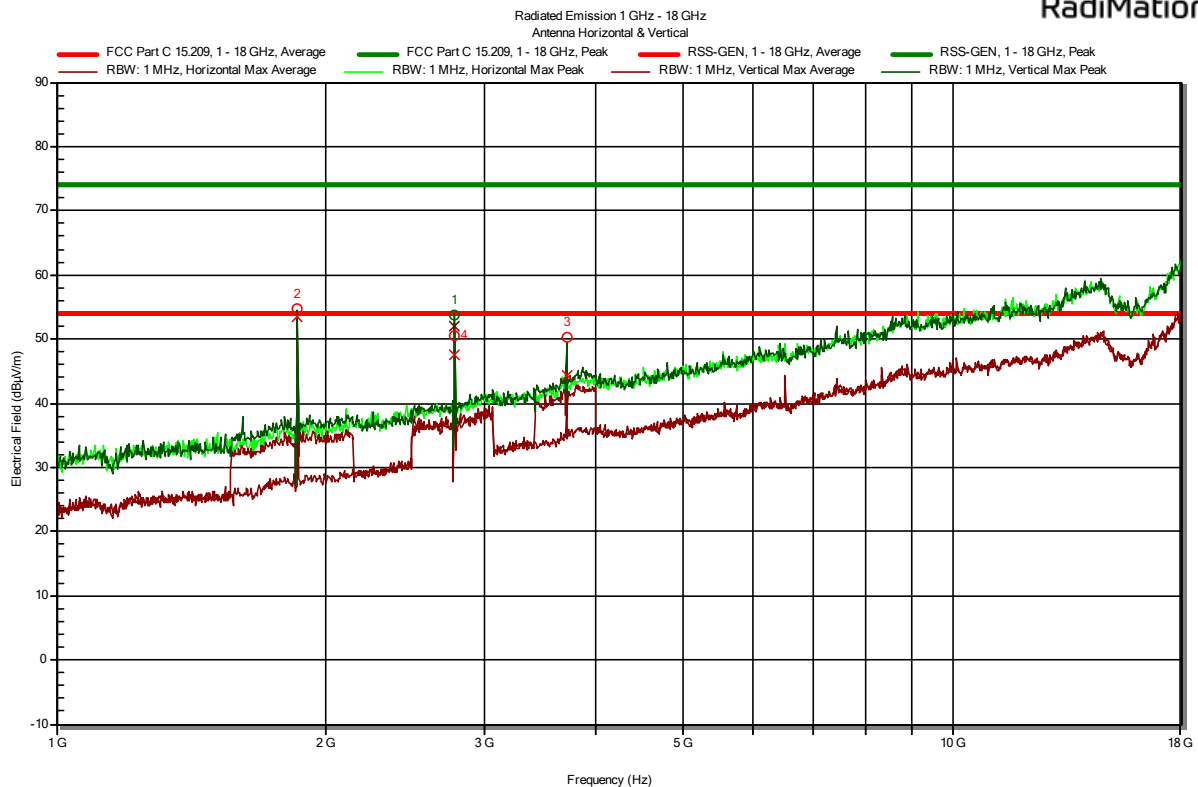


Plot 5a: radiated emissions of the EUT in the range 1 – 18 GHz
(peak and average values shown) Low channel



Plot 5b: radiated emissions of the EUT in the range 1 – 18 GHz
(peak and average values shown) Middle channel

RadiMation



3.2 20 dB bandwidth

3.2.1 Limit

The maximum 20 dB Bandwidth shall be 500 kHz.

3.2.2 Measurement instruments

The measurement instruments are listed in chapter 2.3 of this report.

3.2.3 Test setup

The test setup is as shown in chapter 2.2 of this report.

3.2.4 Test procedure

According to ANSI C63.10, section 6.9

IRN 404 - Occupied bandwidth (Hz) Method 4 – DTS Bandwidth.

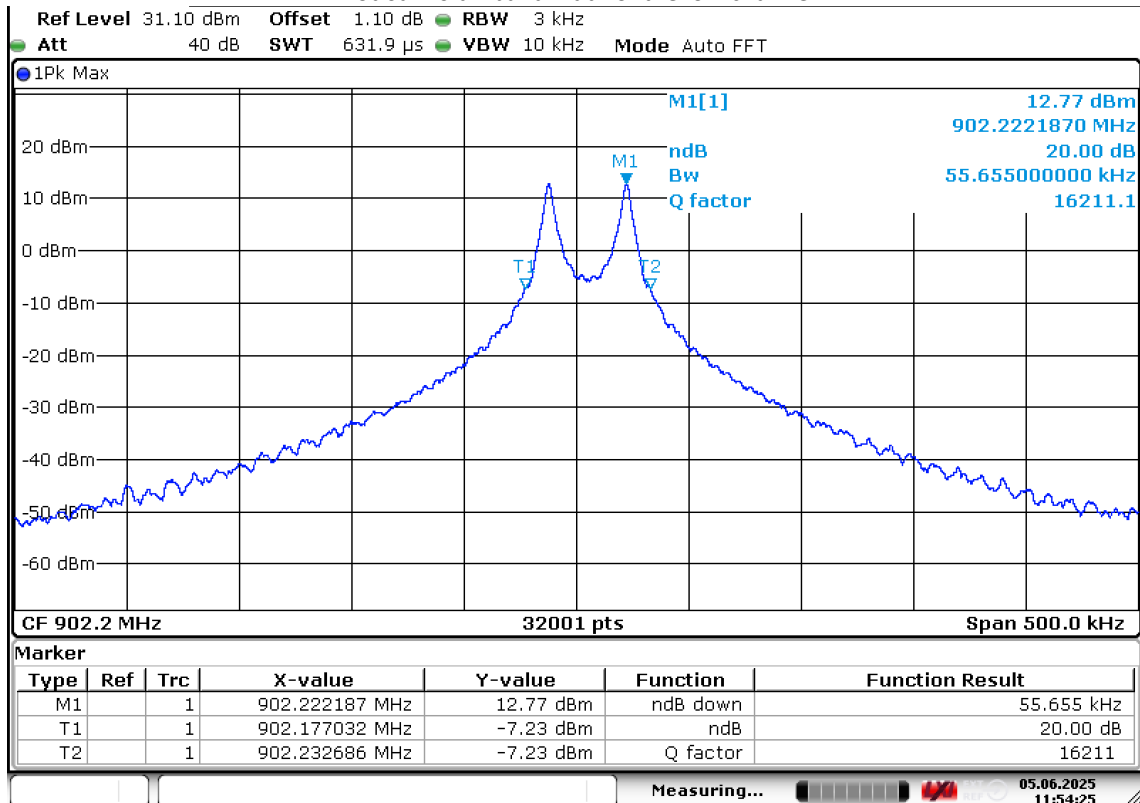
3.2.5 Test Results of the 20 dB bandwidth Measurement

Technology Std.	Channel	Frequency (MHz)	Data rate	20 dB bandwidth (kHz)
Proprietary	Low	902.2	20 kbps	55.65
	Mid	914.9	20 kbps	55.57
	High	927.6	20 kbps	55.73
Uncertainty	± 4.4 kHz			

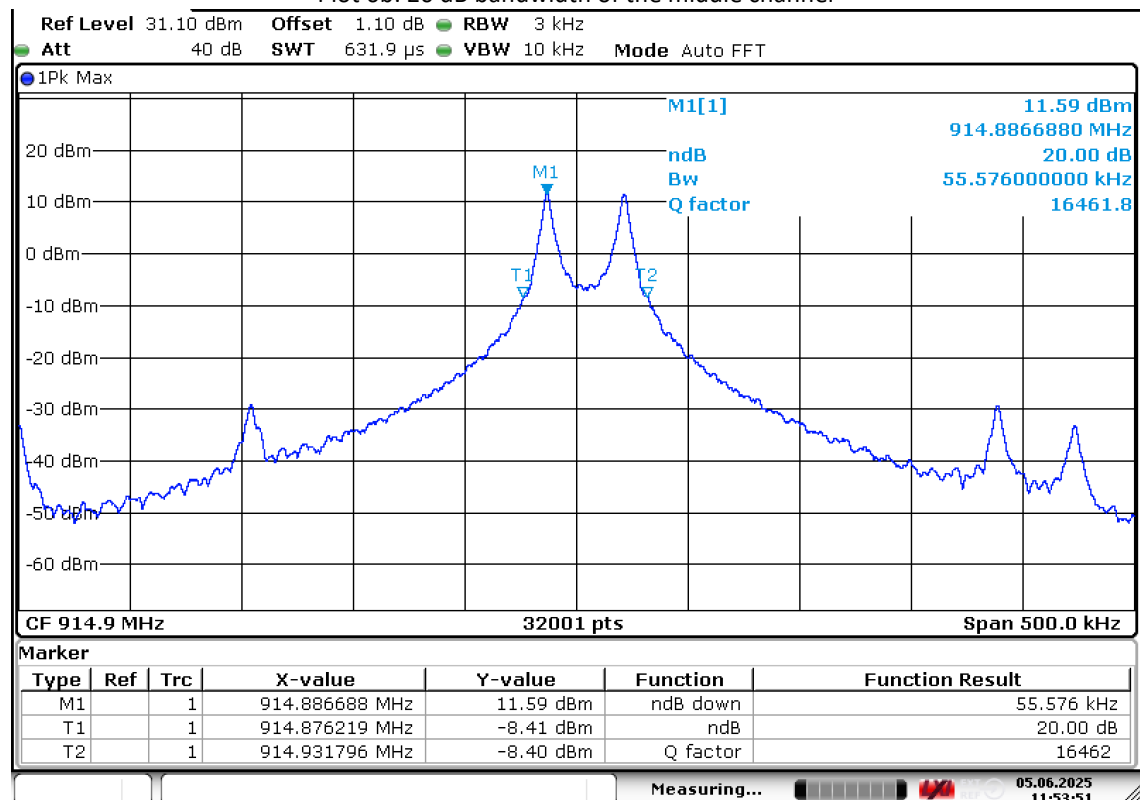
Note: plots are provided on the next page.

3.2.6 Plots of the 20 dB bandwidth measurement

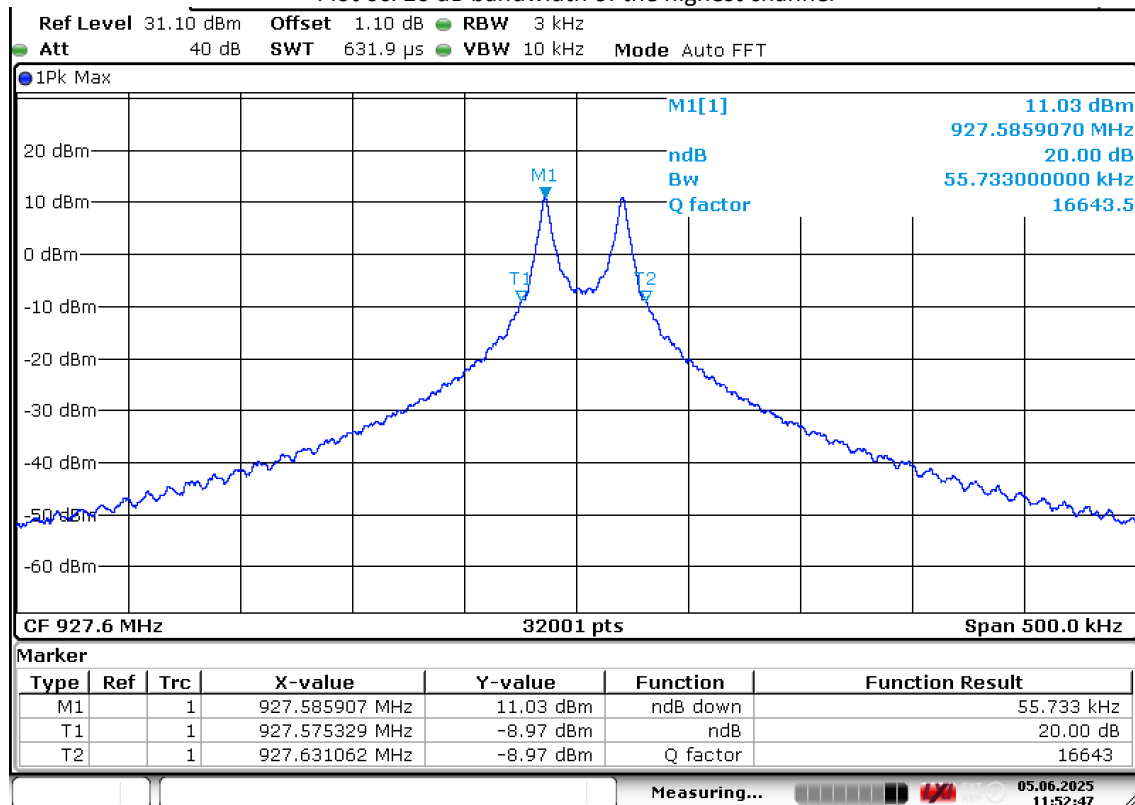
Plot 6a: 20 dB bandwidth of the low channel



Plot 6b: 20 dB bandwidth of the middle channel



Plot 6c: 20 dB bandwidth of the highest channel



3.3 99% Occupied Bandwidth

3.3.1 Limit

According to RSS-Gen 6.7

3.3.2 Measurement instruments

The measurement instruments are listed in chapter 2.3 of this report.

3.3.3 Test setup

The test setup is as shown in chapter 2.2 of this report.

3.3.4 Test procedure

According to ANSI C63.10, section 6.9

IRN 404 - Occupied bandwidth (Hz) Method 1 – XX % power bandwidth.

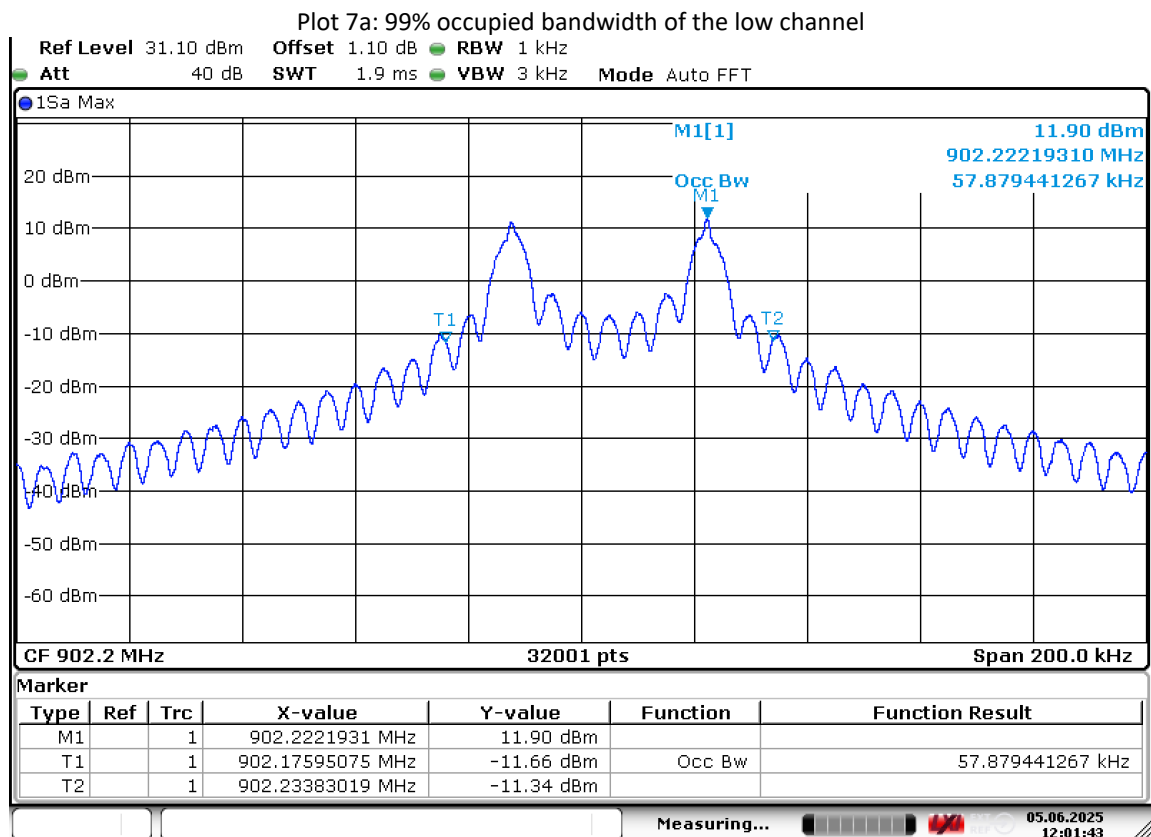
3.3.5 Test results of the 99% occupied bandwidth measurement

Variant 3v1:

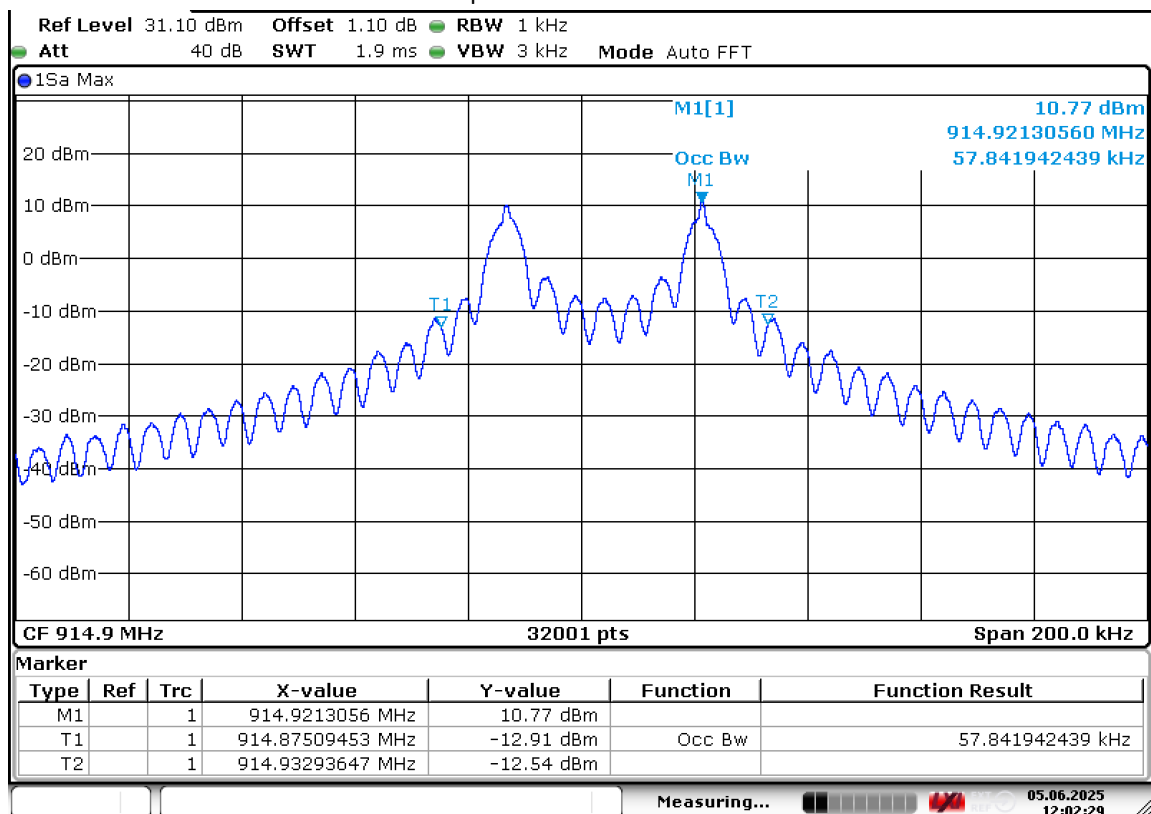
Technology Std.	Channel	Frequency (MHz)	Data rate	99% bandwidth (kHz)
Proprietary	Low	902.2	20 kbps	57.88
	Mid	914.9	20 kbps	57.84
	High	927.6	20 kbps	57.60
Uncertainty	± 4.4 kHz			

Note: plots are provided on the next page.

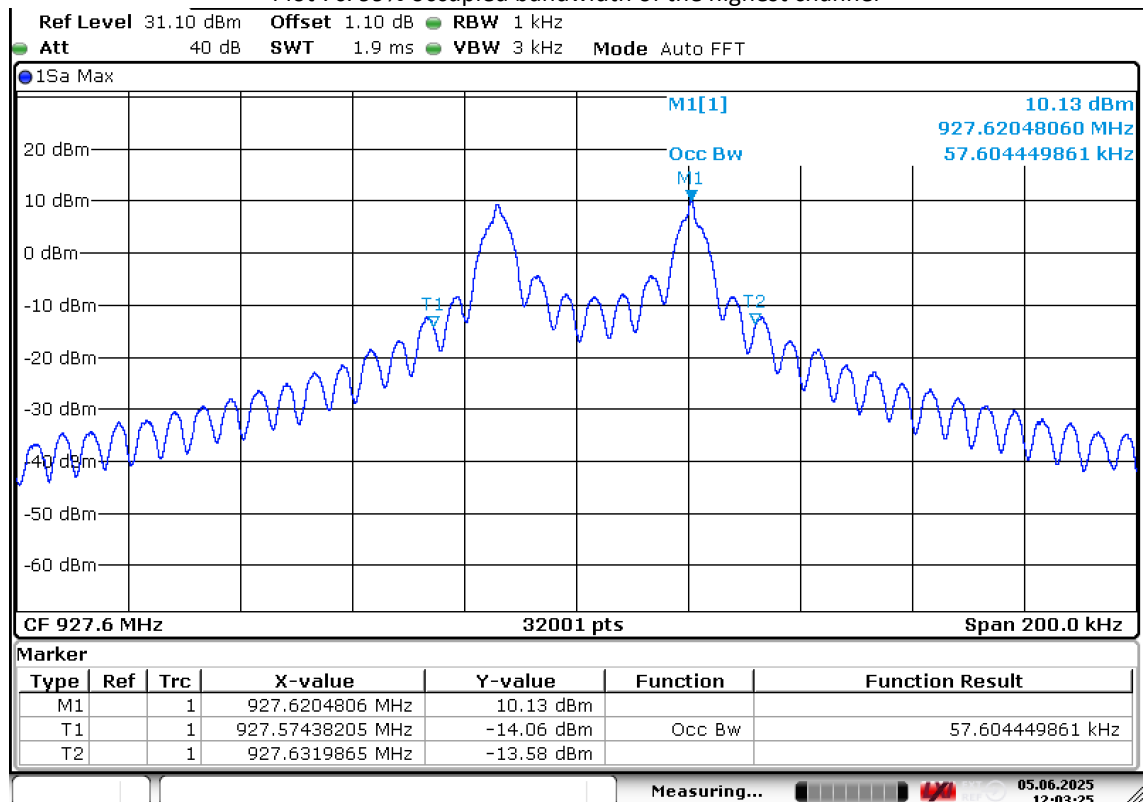
3.3.6 Plots of the 99% occupied bandwidth measurement



Plot 7b: 99% occupied bandwidth of the middle channel



Plot 7c: 99% occupied bandwidth of the highest channel



3.4 Output Power Measurement

3.4.1 Limit

FCC: For frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels, as permitted under paragraph (a)(1)(i) of this section. The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.4.2 Measurement instruments

The measurement instruments are listed in chapter 2.3 of this report.

3.4.3 Test setup

The test setup is as shown in chapter 2.2 of this report.

3.4.4 Test procedure

The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v05r02.

IRN 402 - RF power (W) - Method 12 – Peak Method according to ANSI C63.10.

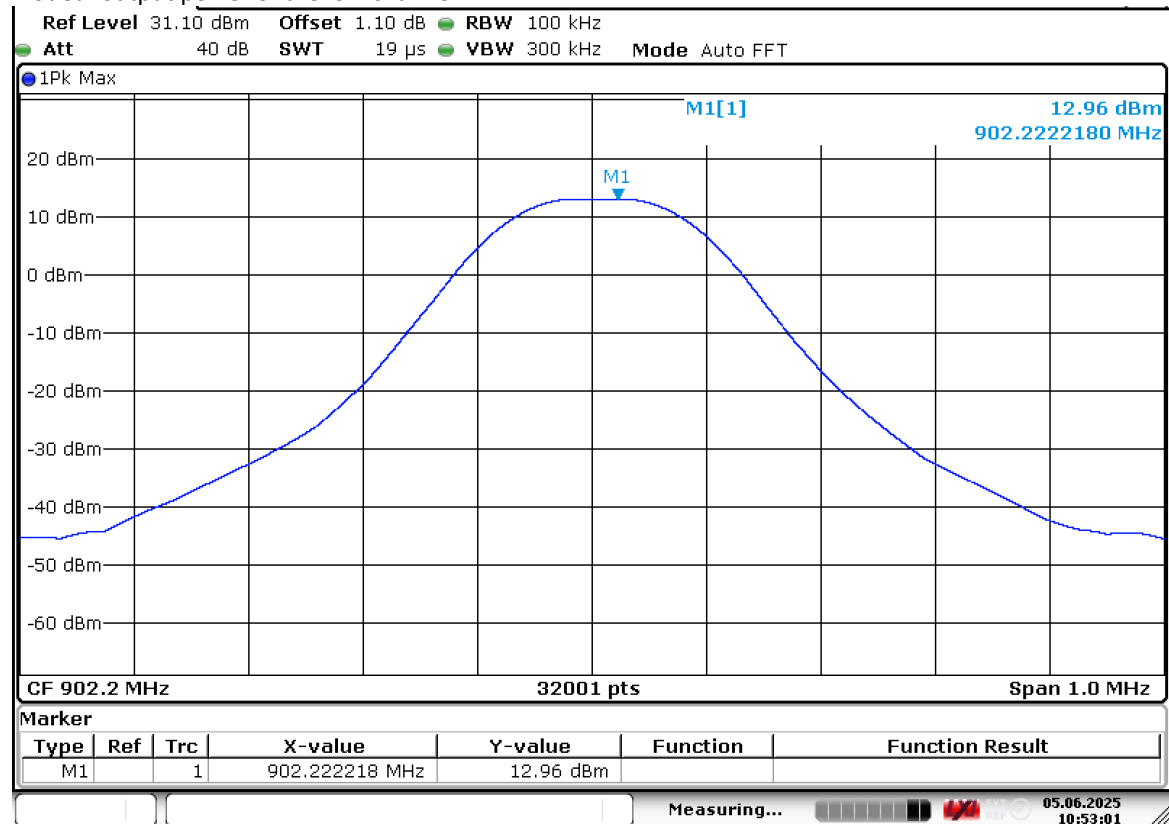
3.4.5 Test results of Output Power Measurement

Peak method						
Technology Std.	Channel	Frequency (MHz)	Data rate	Peak output power conducted (dBm)	Peak output power conducted (mW)	Peak output power EIRP (mW)
Proprietary	Low	902.2	20 kbps	12.96	19.77	10.38
	Mid	914.9	20 kbps	11.87	15.38	8.07
	High	927.6	20 kbps	10.96	12.47	6.55
Uncertainty				±0.71 dB		

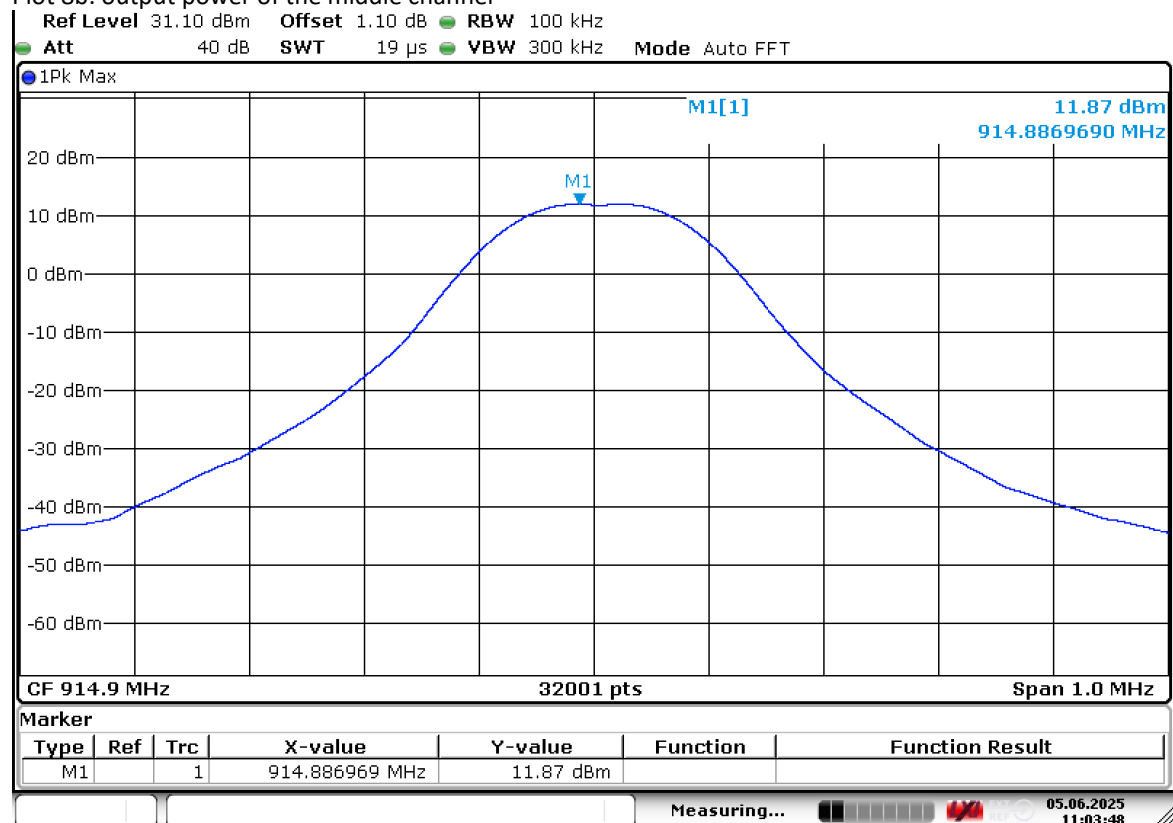
Note: plots are provided on the next page

3.4.6 Plots of the Output power

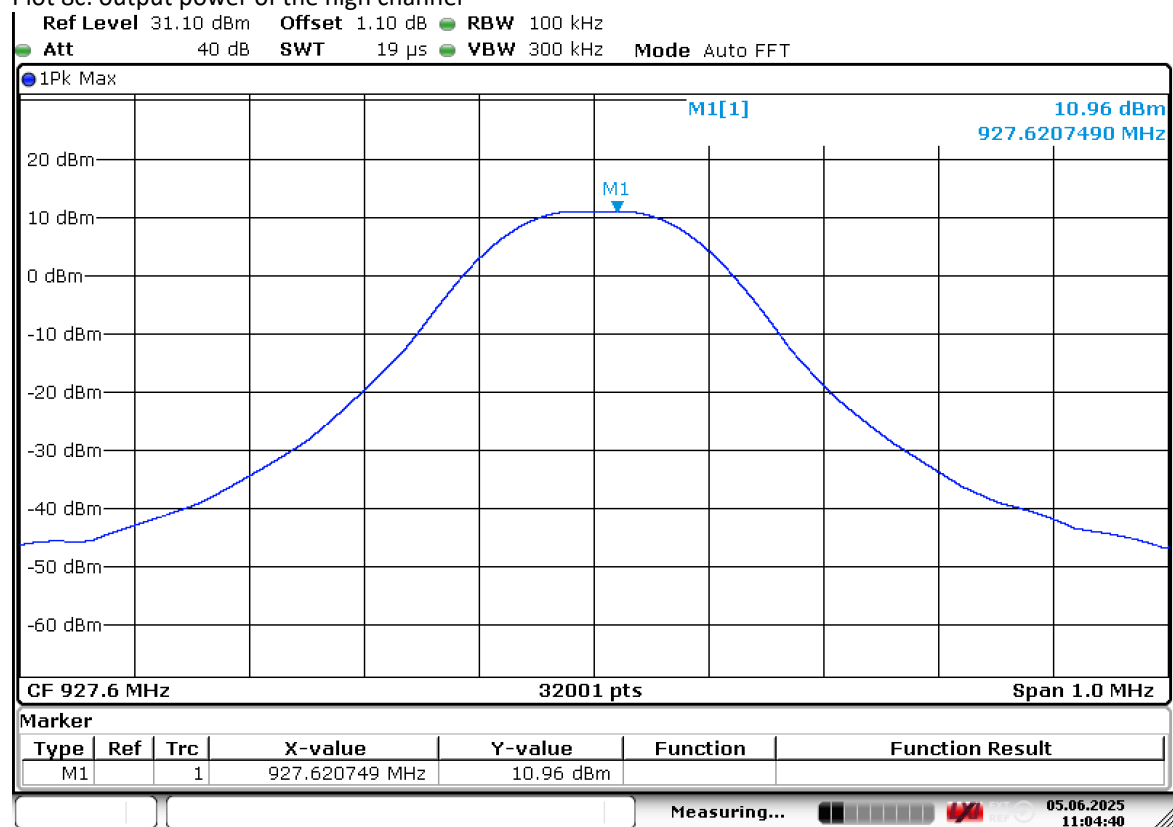
Plot 8a: output power of the low channel



Plot 8b: output power of the middle channel



Plot 8c: output power of the high channel



3.5 Band edge Measurement

3.5.1 Limit

Band edge:

At the edge of the authorized band the RF power shall be at least 20 dB down.

3.5.2 Measurement instruments

The measurement instruments are listed in chapter 2.3 of this report.

3.5.3 Test setup

The test setup is as shown in chapter 2.2 of this report. Antenna port conducted.

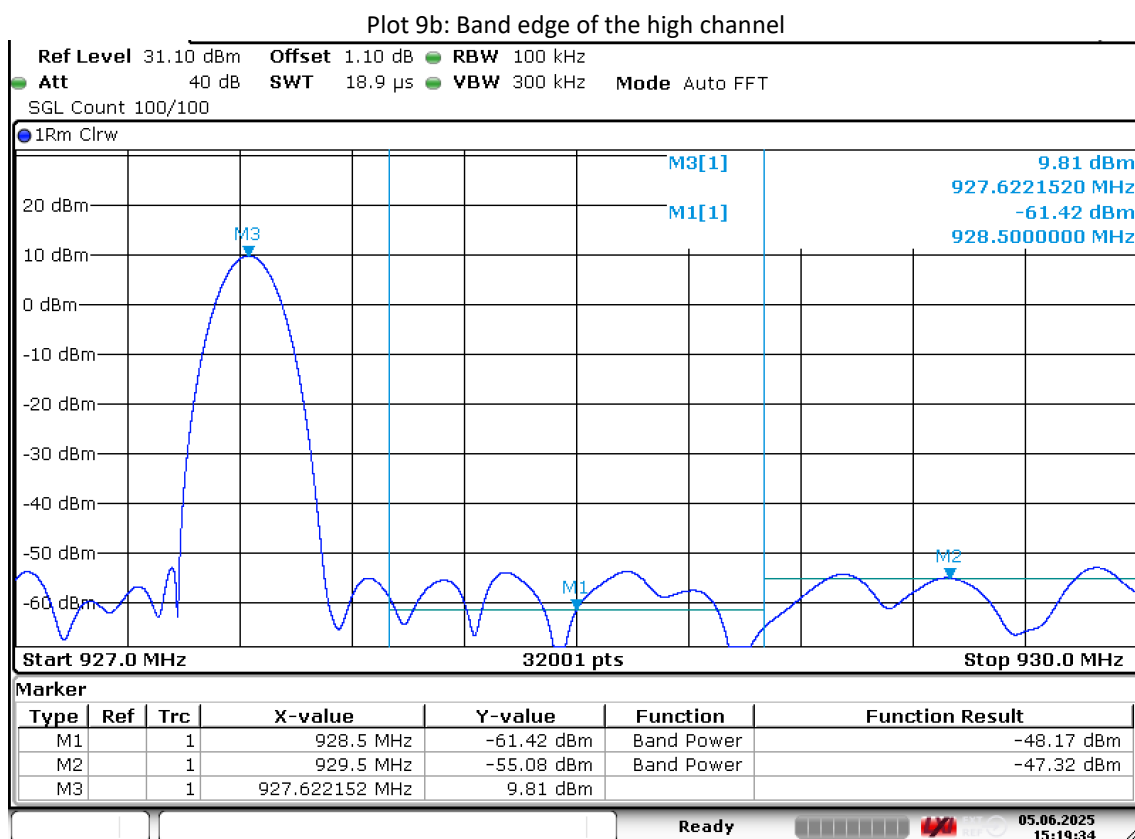
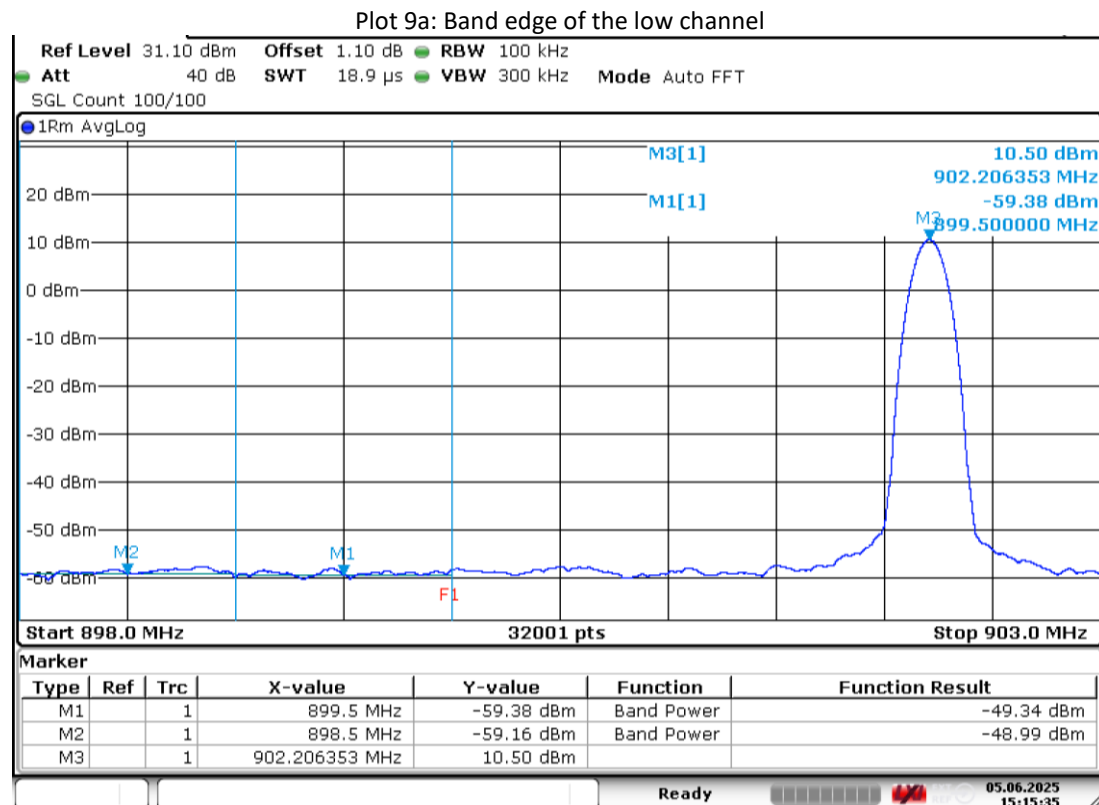
3.5.4 Test procedure

The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v05r02, section 8.7.
IRN 415 – Method 13 – Spurious emissions at the Authorized band edge (relative method).

3.5.5 Measurement Uncertainty

± 5.7 dB.(radiated)

3.5.6 Plots of the Band edge Measurements



3.7 Dwell Time

3.7.1 Limit

For frequency hopping systems operating in the 902 – 928 MHz: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period.

3.7.2 Measurement instruments

The measurement instruments are listed in chapter 2.4 of this report.

3.7.3 Test setup

The test setup is as shown in chapter 2.3 of this report.

3.7.4 Test procedure

The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v05.
IRN 401 - Method 1

3.7.5 Uncertainty

+/- 2.85 %

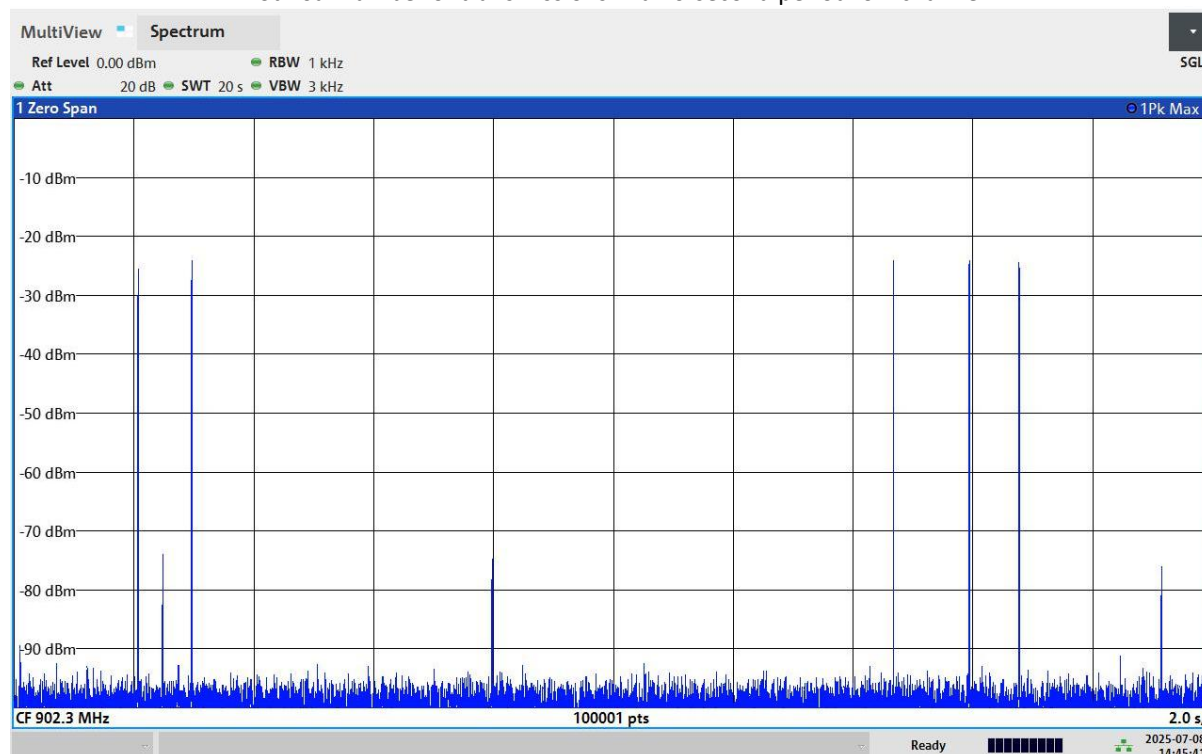
3.7.6 Test results of Dwell time Measurement

In 20 seconds the total Ton time is:

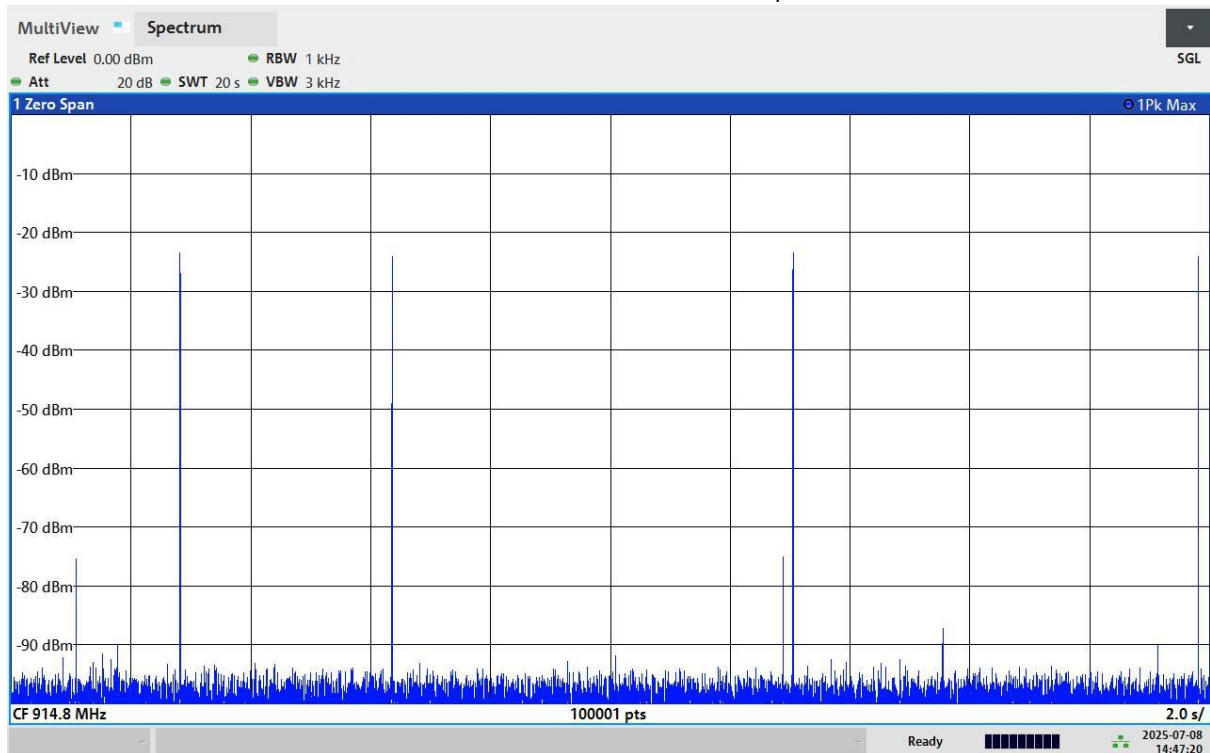
Channel	On time	Status
Low	0.0622s	Pass
Mid	0.0476s	Pass
High	0.0334s	Pass

3.7.7 Plots for the Dwell time measurement

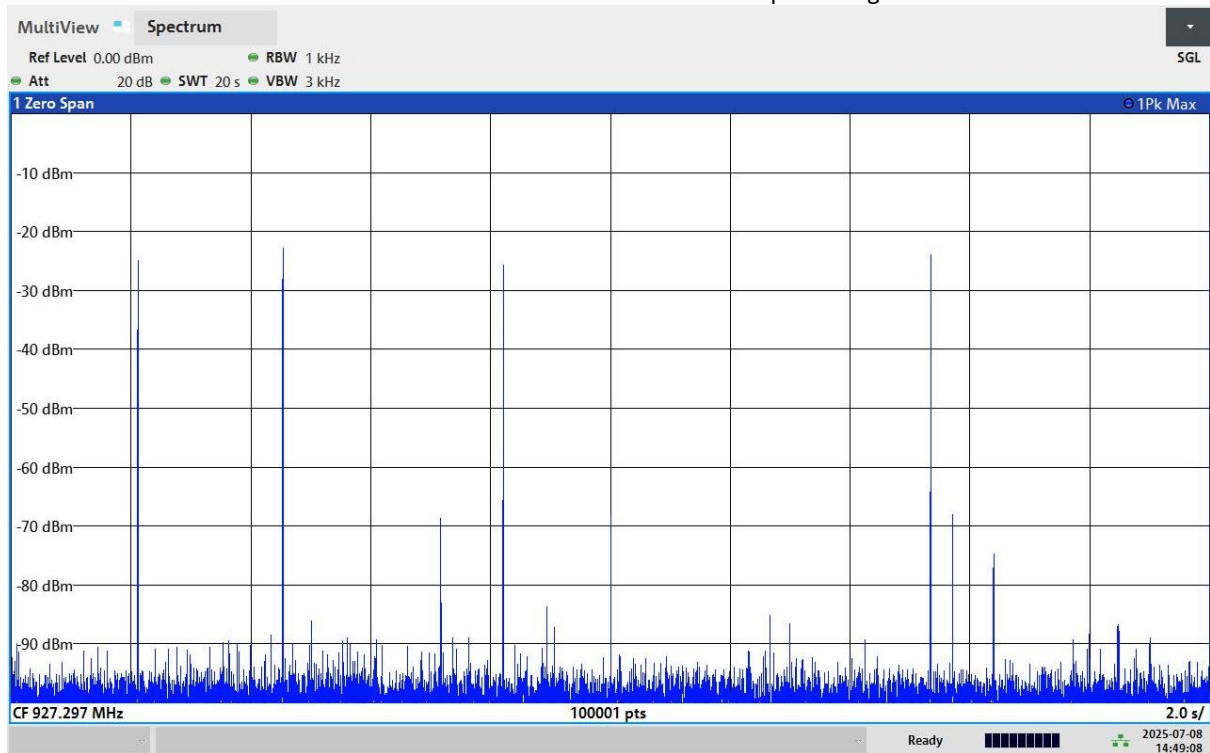
Plot 10a: number of transmissions in a 20-second period low channel



Plot 10b: number of transmissions in a 20-second period mid channel



Plot 10c: number of transmissions in a 20-second period high channel



3.8 Channel Separation

3.8.1 Limit

Frequency hopping systems operating in the 902 – 928 MHz shall have hopping frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

3.8.2 Measurement instruments

The measurement instruments are listed in chapter 2.4 of this report.

3.8.3 Test setup

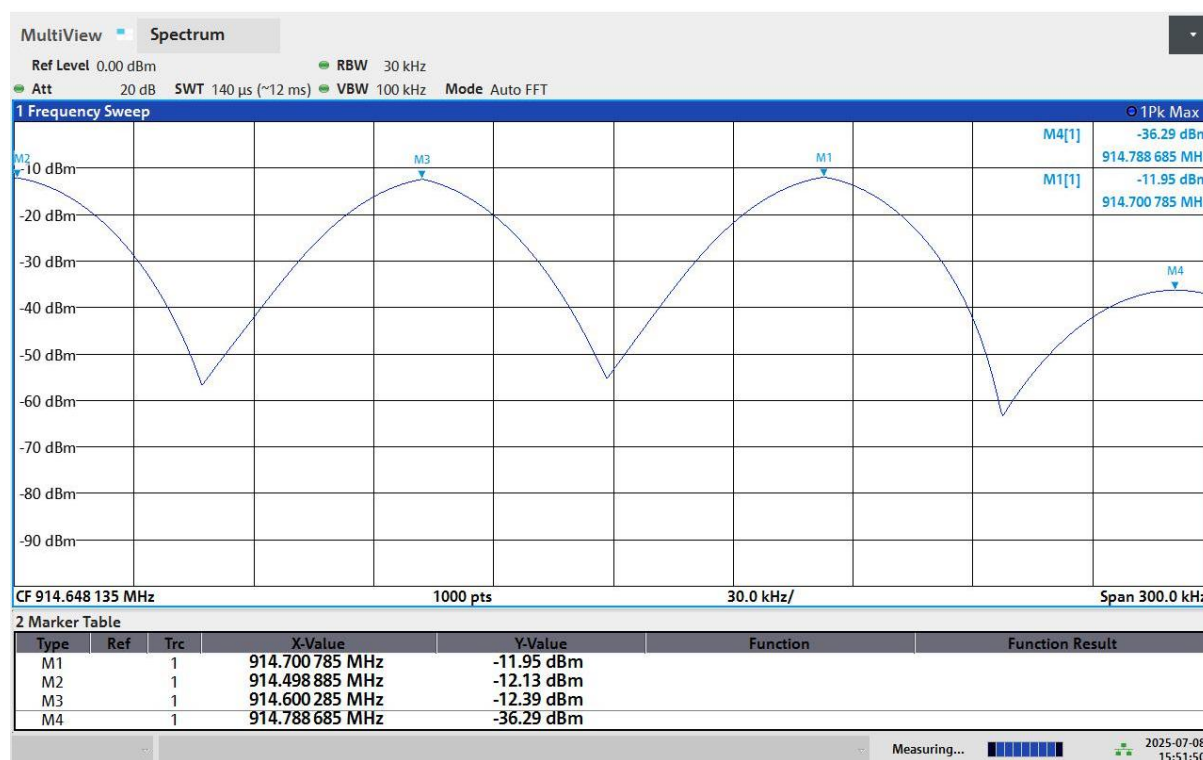
The test setup is as shown in chapter 2.3 of this report.

3.8.4 Test procedure

The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v05.
IRN 400 - Method 3

3.8.5 Test results of Channel Separation Measurement

Separation between channels is 100kHz.



Plot 11: Channel separation between two operating channels

3.9 Number of hopping channels

3.9.1 Limit

For frequency hopping systems operating in the 902 – 928 MHz: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies.

3.9.2 Measurement instruments

The measurement instruments are listed in chapter 2.4 of this report.

3.9.3 Test setup

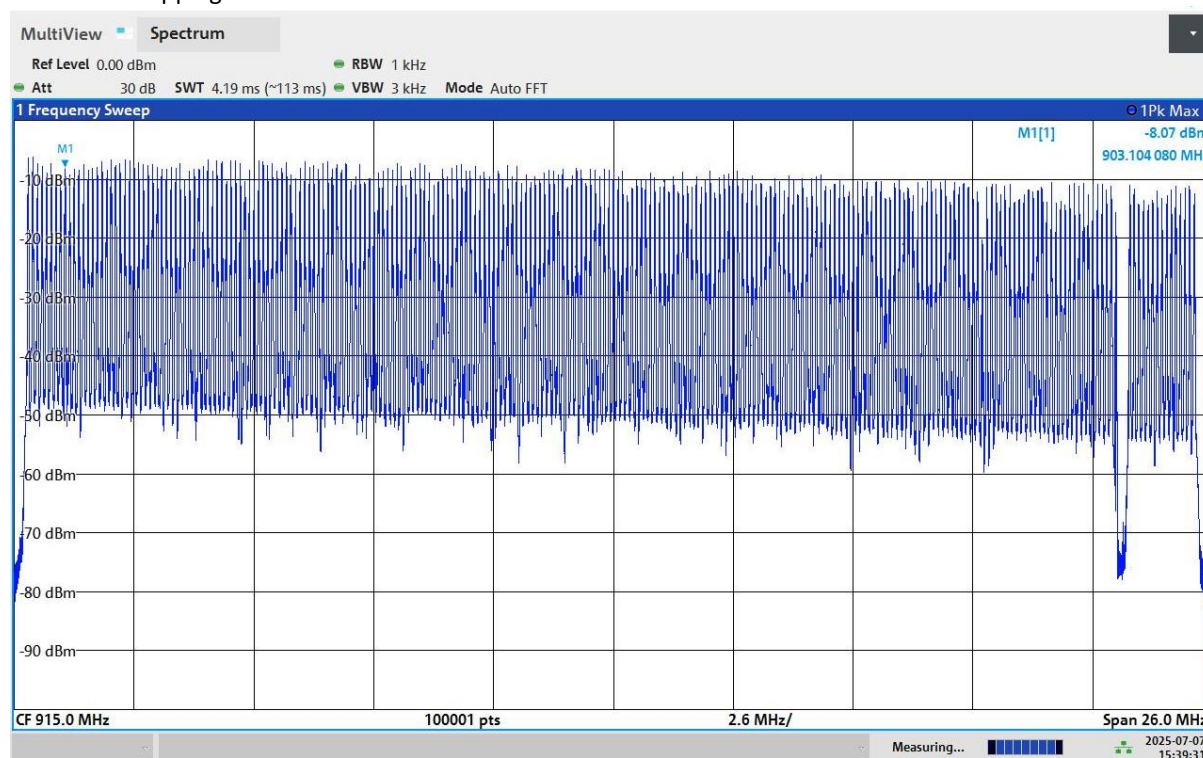
The test setup is as shown in chapter 2.3 of this report.

3.9.4 Test procedure

The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v05.
IRN 400 - Method 2

3.9.5 Test results of number of Hopping Channels measurement

Number of hopping channels is 252 channels



Plot 12: Number of hopping channels

4 Sample calculations

All formulas for data conversions and conversion factors are reported in this chapter.

Conducted emission Measurement:

$$U_{\text{lisn}} (\text{dB}\mu\text{V}) = U (\text{dB}\mu\text{V}) + \text{Corr. (dB)}$$

Where:

U = Measuring receiver voltage

LISN insertion loss = Voltage division factor of LISN

Corr. = sum of single correction factors of used LISN, cables and pulse limiter.

Linear interpolation will be used for frequencies in between the values in the table.

Frequency (MHz)	Voltage division LISN (db)	Cable loss (dB)	Corr. (dB)
	114379 SN: 230000813 Rohde & Schwarz ENV 216	TE 11134	
0,15	9.7	0.02	9.72
0,2	9.68	0.03	9.71
0,3	9.68	0.03	9.71
0,5	9.69	0.08	9.77
0,7	9.69	0.25	9.94
0,8	9.69	0.25	9.94
1	9.68	0.11	9.79
2	9.7	0.15	9.85
3	9.71	0.21	9.92
5	9.72	0.21	9.93
7	9.76	0.25	10.01
8	9.77	0.25	10.02
10	9.77	0.29	10.06
15	9.84	0.34	10.18
20	9.88	0.37	10.25
25	9.97	0.43	10.4
30	10.08	0.45	10.53

Magnetic field strength measurement:

$$H \left[dB \left(\mu \frac{A}{m} \right) \right] = V[dB(\mu V)] + L_c[dB] + AF^H \left[\frac{dB}{\Omega m} \right]$$

Where:

H is the magnetic field strength (to be compared to the limit)

V is the voltage level measured by the receiver or spectrum analyzer

L_c is the cable loss

AF^H is the magnetic antenna factor

Frequency (MHz)	AF	300m to 3m and 30m to 3m correction	CL (dB)	Corr. (dB)
	114515 EMCO 6505 S/N:9112-2710		SAR cable	
0.009	18.49	104.956	0.7	-85.8
0.01	17.64	104.041	0.05	-86.4
0.02	13.23	98.02	0.07	-84.7
0.03	11.65	94.498	0.1	-82.7
0.04	10.97	91.999	0.1	-80.9
0.1	10.14	84.041	0.1	-73.8
0.2	10.01	78.02	0.1	-67.9
0.5	9.95	50.061	0.1	-40
1	9.91	44.041	0.2	-33.9
3	9.93	34.498	0.2	-24.4
5	9.93	30.061	0.3	-19.8
10	9.75	24.041	0.6	-13.7
15	9.29	20.519	0.9	-10.3
20	8.57	18.02	1	-8.5
25	7.55	16.082	0.7	-7.8
27	7.01	15.413	1.2	-7.2
30	6.03	14.498	1	-7.5

Field Strength Measurement:

$$E \text{ (dB}\mu\text{V/m)} = U \text{ (dB}\mu\text{V)} + AF \text{ (dB/m)} + \text{Corr. (dB)}$$

Where:

E = Electric field strength

U = Measuring receiver voltage

AF = Antenna factor

CL = Cable loss

Corr. = sum of single correction factors of used cable and amplifier (if applicable).

Linear interpolation will be used for frequencies in between the values in the table.

Tables shows an extract of the values.

Frequency (MHz)	AF (dB/m)	Cable loss (dB)	Attenuator	Corr. (dB)
	ID: 107818 EMCO 3109	Id: 114928	ID:114525 Hewlett Packet	
30	13.5	1.8	6	21.3
100	9.2	2.7	6	17.9
150	12.6	3.2	6	21.8
200	13.6	3.6	6	23.2
250	15.2	4.3	6	25.5

Frequency (MHz)	AF (dB/m)	Cable loss (dB)	Corr. (dB)
	ID: 114385 EMCO LPDA	Id: 114928	
250	11.8	4.3	16.1
300	13	5.1	18.1
350	14.2	5.8	20.0
400	15.6	7.3	22.9
450	17.1	7.9	25.0
500	17.3	8.0	25.3
550	17.7	8.0	25.7
600	18.4	7.7	26.1
650	19.2	7.5	26.7
700	19.7	7.7	27.4
750	20.3	7.9	28.2
800	21.4	8.2	29.6
850	22.0	8.7	30.7
900	22.1	8.9	31.0
950	22.6	9.2	31.8
1000	22.5	9.6	32.1

Frequency (MHz)	AF (dB/m)	Gain (dB)	Cable loss (dB)	Corr. (dB)
	114607 Emco 3115 SN: 9412-4377	114690 µComp Nordic MCNA-40-0010800-25-10P	114691	
1000	23.6	45.1	2.1	-19.4
2000	27.1	44.7	3.3	-14.3
3000	30.5	44.2	4.2	-9.5
4000	32.7	43.5	4.9	-5.9
5000	33.2	43.1	5.6	-4.3
6000	34.6	43.0	6.3	-2.1
7000	35.2	42.9	6.4	-1.3
8000	37.0	43.3	7.2	0.9
9000	38.1	43.3	7.9	2.7
10000	38.2	43.0	8.2	3.4
11000	38.3	42.9	8.7	4.1
12000	39.1	42.6	9.0	5.5
13000	39.2	43.6	9.8	5.4
14000	41.1	44.3	9.7	6.5
15000	40.2	44.4	10.4	6.2
16000	37.5	44.3	10.8	4.0
17000	41.1	44.5	11.4	8.0
18000	44.0	44.9	11.4	10.5

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