

EMC TEST REPORT

No. 2500147STO-101

Electromagnetic disturbances

EQUIPMENT UNDER TEST

Equipment: AIR Antenna Integrated Radio AAS

Type/Model: AIR 3283 B25 B66

Product number: KRD 901 892/2

Product configuration: LTE and NR

Manufacturer: Ericsson AB

Tested by request of: Ericsson AB

*See opinions and interpretations clause 2.6

SUMMARY

Referring to the emission limits, and the operating mode during the tests specified in this report, the equipment complies with the radiated spurious emission requirements according to the following standards:

47 CFR Part 2 Subpart J

47 CFR Part 24 Subpart E

47 CFR Part 27 Subpart C

RSS-GEN: Issue 5

RSS-133 issue 7

RSS-139 issue 4

For details, see clause 2 – 4.

Issued by:

Thomas Pettersson

Approved by:

Anna Karin Cedergren

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Revision History

Test report number	Date	Description	Changes
2500147STO-101	March 14, 2025	First release	--

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1. CLIENT INFORMATION

The EUT has been tested by request of

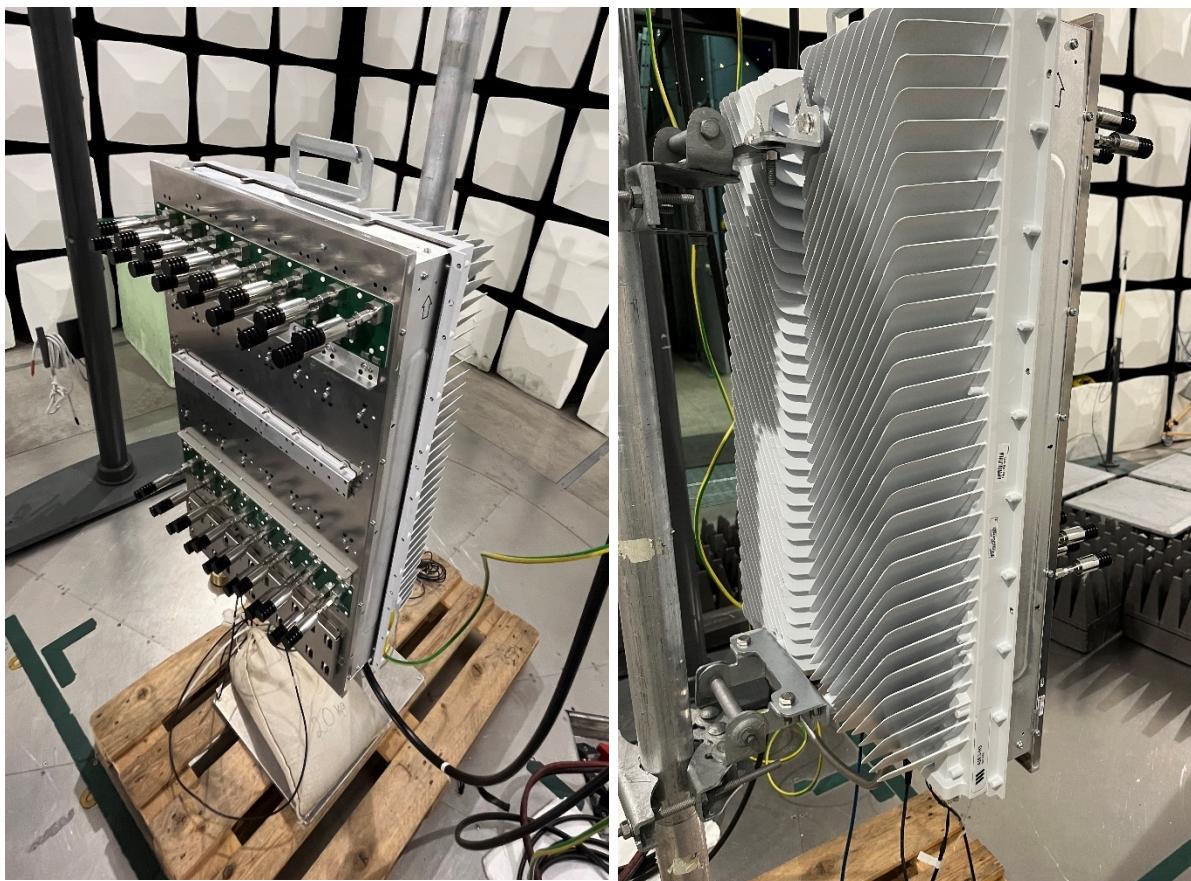
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164 80 Stockholm
Sweden

Name of contact: Lennart Blixt
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Client observer: Haji Akbar Babar

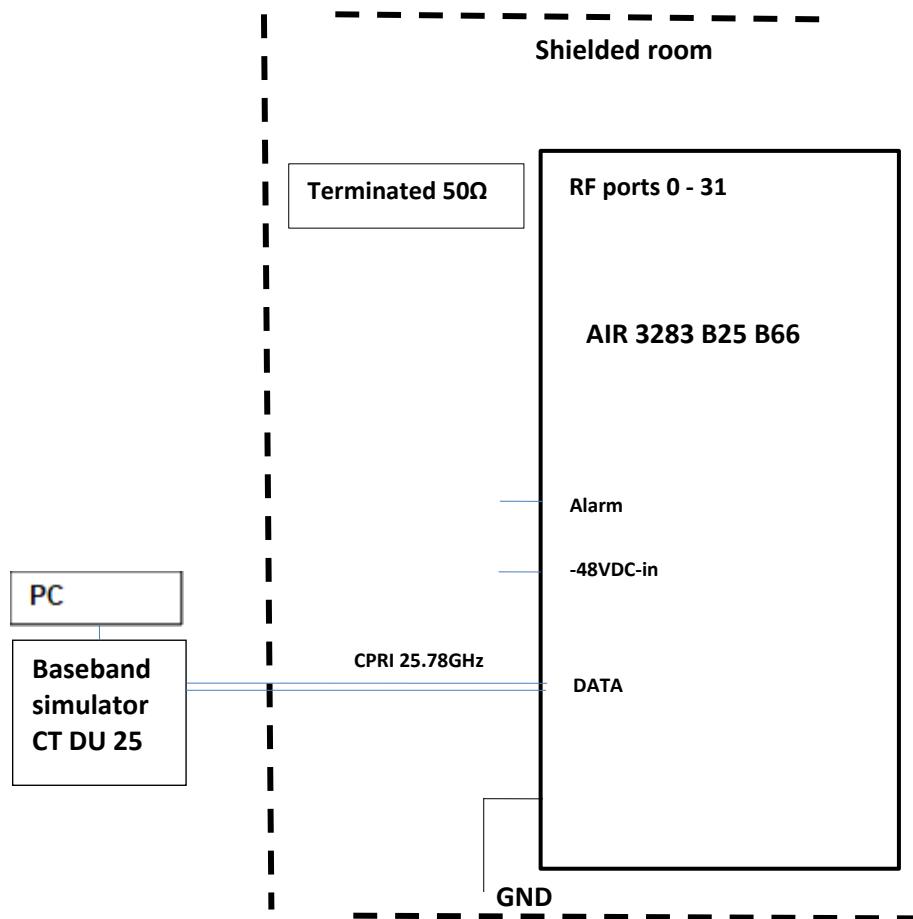
2. EQUIPMENT UNDER TEST (EUT)**2.1 Identification of the EUT**

Equipment	AIR Antenna Integrated Radio AAS
Type/Model	AIR 3283 B25 B66
Product number	KRD 901 892/2
Product configuration	LTE and NR
Brand name	Ericsson
Manufacturer	Ericsson
Rating	-48VDC max: 50A
Class	III
Highest clock frequency	CPRI 25,78 GHz

Photos of EUT**Photos of markings****2.2 Description of the EUT**

The test object AIR 3283 B25 B66 is an antenna integrated radio AAS with LTE and NR support. It is designed to provide mobile users with a connection to a mobile network.

2.3 Test setup- block diagram



Block diagram of EUT during the tests

2.4 External cables connected to the EUT

Port	Type	Length [m]	Specifications
DC input power	RPM 150 54/10M R1A	10,0	DC power Three-wire
Earth	Ground	2,0	Single wire, 35mm ²
External Alarm	RPM 513 2350/15000 R1A	10,0	Shielded signal cable
Data_1 & 2	RPM 253 1610/20M	20,0	Optical fibre cable
Antenna port	RF cable	--	Terminated

2.5 Auxiliary equipment (AE)

Auxiliary equipment is equipment needed for correct operation of the EUT, but not included as part of the testing and evaluation of the EUT.

Equipment	Type / Model	Manufacturer	Serial no.
Computer	MacBook Pro	Apple	BAMS-1002122810 ASSET: 4156065
Baseband simulator CT-DU25	LPC 102 500/1	Ericsson	T01G522083
SFP module	RDH 102 75/3 R1A	Ericsson	EA61XL030D
SFP module	RDH 102 75/3 R1A	Ericsson	EA61XL0E7F

2.6 Opinions and interpretations

The following types are also included as additional types in this test report:

The differences between the models are (according to the manufacturer):

Type/Model	Product numbers	Comment
AIR 3283 B25 B66	KRD 901 892/1	Radio including AFU (Antenna Filter Unit), with un-security software
	KRD 901 892/2*	Radio including VFU (Verification Filter Unit, excluding antenna) with un-security software
	KRD 901 892/11	Radio including AFU (Antenna Filter Unit) with security software
	KRD 901 892/21	Radio including VFU (Verification Filter Unit, excluding antenna) with security software

*Tested unit. The tests were performed on KRD 901 892/2 (AIR 3283 B25 B66 with un-security software for testing purposes).

The hardware and software (except for the security software) are identical for all types above.

The difference is considered not to imply different FCC part 2 Radio characteristics when compared to the tested type.

2.7 Decision rule

The statements of conformity are reported as:

Passed – When the measured values are within the specified limits.

Failed – When one or more measured values are outside the specified limits.

3. TEST SPECIFICATIONS

3.1 Standards

Requirements:

FCC 47 CFR Part 2 Subpart J 2023
FCC 47 CFR Part 24 Subpart E 2020
FCC 47 CFR Part 27 Subpart C 2020
RSS-GEN: Issue 5
RSS-133 issue 7 July 24, 2024
RSS-139 issue 4 September 29, 2022

Test methods:

KDB971168 D01 Power Meas License Digital Systems v03r01
ANSI C63.26: 2015: American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services

3.2 Additions, deviations and exclusions from standards and accreditation

The following deviation from standards and accreditation was made: only the radiated spurious emission performed according to manufacturer's request.

No other additions, deviations or exclusions have been made from standards and accreditation.

3.3 Test site

Measurements were performed at:

Intertek Semko AB.
Torshamnsgatan 43,
P.O. Box 1103
SE-164 22 Kista

Intertek Semko AB is a FCC listed test site with site registration number 90913
Intertek Semko AB is a FCC accredited conformity assessment body with designation number SE0002
Intertek Semko AB is an Industry Canada listed test facility with IC assigned code 2042G
Intertek Semko AB is an Innovation, Science and Economic Development Canada recognized wireless device testing laboratory with CAB identifier SE0003

Measurement chambers

Measurement Chamber	Type of chamber	IC Site filing #
5 m CHAMBER	Semi-anechoic 5 m	2042G-3

3.4 Mode of operation during the test

The EUT was tested with -53 V DC, up to 29 A. Max total output power is 320W.

	Total bands	B25	B2	B66
Maximum Total Power	320W	240W	240W	240W

Radio Configuration

The AIR 3283 B25 B66 was configured to operate with LTE and NR technologies.

The EUT was tested with 7 different radio transmitting configurations. See the table on next page for detailed radio configurations of the EUT.

Transmission bands:

B25/n25: UL/DL 1850 - 1915 MHz / 1930MHz - 1995MHz

B2/n2: UL/DL 1850 - 1910 MHz / 1930MHz - 1990MHz

B66/n66: UL/DL 1710 - 1780 MHz / 2110MHz - 2200MHz

LTE:

The test object was activated for maximum transmit power. Test Model for B25/B2 is 64QAM E-TM3.1 whereas for B66 is QPSK E-TM1.1. as defined in ETSI TS 136 141/ 3GPP TS 36.141.

NR:

The test object was transmitting test model FR1-TM1.1 as defined in ETSI TS 138 141/ 3GPP TS 38.141-1.

Radio configuration for radiated emission

Configuration	No of Carriers	Carrier Frequency MHz	BW MHz	RF power (W)/Carrier	Total Power (W)
B25/B2					
C1	B25-NR-1C-QPSK-B	1	1942.5	25	240
C2	B25-NR-1C-QPSK-M	1	1962.5	25	240
C3	B25-NR-1C-QPSK-T	1	1982.5	25	240
C4	B2-NR-1C-QPSK-T	1	1977.5	25	240
C5	B25-NR-1C-QPSK-M	1	1950.0	25	120
	B25-NR-1C-QPSK-M	1	1975.0	25	120
C6	B25-LTE-1C-64QAM-M	1	1937.5	5	40
	B25-NR-1C-QPSK-M	1	1952.5	25	100
	B25-NR-1C-QPSK-M	1	1977.5	25	100
Multiband					
C7	B25-LTE-1C-64QAM-M	1	1942.5	5	15
	B25-NR-1C-QPSK-M	1	1952.5	15	45
	B25-NR-1C-QPSK-M	1	1972.5	25	100
	B66-LTE-1C-QPSK-M	1	2135.0	20	70
	B66-NR-1C-QPSK-M	1	2147.5	5	20
	B66-NR-1C-QPSK-M	1	2160.0	20	70

Modulation for B25/2/66 NR is QPSK while for B25/2 LTE is 64QAM and B66 LTE is QPSK.

3.5 Compliance

The EUT shall comply with the emission limits as listed below.

Spurious emission at antenna terminals

CFR47 §2.1051, §27.53(h), §24.229(a)(b)(c), RSS-133.6.5, RSS-139.5.6

The conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz

Test Summary

The results in this report apply only to sample tested:

Standard	Description	Result
	Emission	
ANSI C63.26	Field strength of spurious radiation The EUT complies with the limits. The margin to the limit was more than 20 dB to the limit at 30 – 1000 MHz. The margin to the limit was more than 20 dB to the limit at 1 – 18 GHz. Only noise detected at 18 – 22 GHz. See clauses 5.3-5.5.	PASS

4. RADIATED RF EMISSION IN THE FREQUENCY-RANGE 30 MHZ– 22 GHZ

Date of test	Temperature [°C]	Relative Humidity [%]	Tested by
March 3, 2025	20	27	Thomas Pettersson
March 4, 2025	20	26	Thomas Pettersson
March 5, 2025	20	31	Thomas Pettersson
March 6, 2025	20	36	Thomas Pettersson

4.1 Test set-up and test procedure

The test method is in accordance with ANSI C63.26.

The EUT was set up in order to emit maximum disturbances.

30 – 1000 MHz: The EUT was placed on a pole 0.8 m above the turntable which is part of the reference ground plane (RGP). The pole was insulated from RGP with 15 cm thick support.

> 1000 MHz: The center of the EUT was 1.5 m above the turntable which is part of the reference ground plane (RGP). The pole was insulated from RGP with 15 cm thick support. Absorbers were placed on the floor between the EUT and measurement antenna.

Overview sweeps were performed with the measurement receiver in max-hold mode and the peak and average detectors activated in the frequency-range

The EUT is continuously rotated 360°

Test set-up: 30 MHz – 22 GHz

Test receiver set-up:

Preview test:	Peak	RBW 1 MHz, VBW 3 MHz
Final test:	Average	RBW 1 MHz, VBW 3 MHz
Measuring distance:	RMS	RBW 1 MHz, VBW 3 MHz
Measuring angle:	3 m	
EUT height above ground plane:	0 – 359°	
Antenna	0.8 m	1.5 m
Type:	30 – 1000 MHz	1 – 22 GHz
Antenna tilt:	Bilog	Horn
Height above ground plane:	Not Activated	Activated
Polarisation:	1 – 4 m	
	Vertical and Horizontal	

$E[\text{dB}\mu\text{V}/\text{m}] = \text{Analyser reading } [\text{dB}\mu\text{V}] + \text{Antenna factor } [1/\text{m}] - \text{Amplifier gain } [\text{dB}] + \text{Cable loss } [\text{dB}]$

$\text{EIRP } [\text{dBm}] = E[\text{dB}\mu\text{V}/\text{m}] + 20\log[3] - 104.8$

4.2 Measurement uncertainty

Measurement uncertainty for radiated disturbance

Uncertainty for the frequency range 30 to 1000 MHz at 3 m	± 5.1 dB
Uncertainty for the frequency range 30 to 1000 MHz at 10 m	± 5.0 dB
Uncertainty for the frequency range 1.0 to 18 GHz at 3 m	± 4.5 dB
Uncertainty for the frequency range 18 to 26 GHz at 3 m	± 4.8 dB
Uncertainty for the frequency range 26 to 40 GHz at 3 m	± 5.7 dB

Measurement uncertainty is calculated in accordance with CISPR 16-4-2: 2011.

The measurement uncertainty is given with a confidence of 95 %.



Photo of the test set up 30 – 1000 MHz

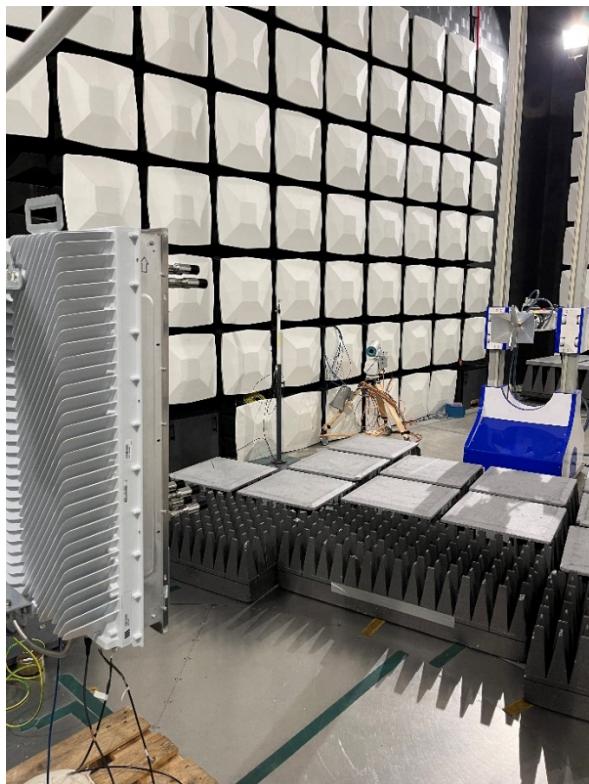
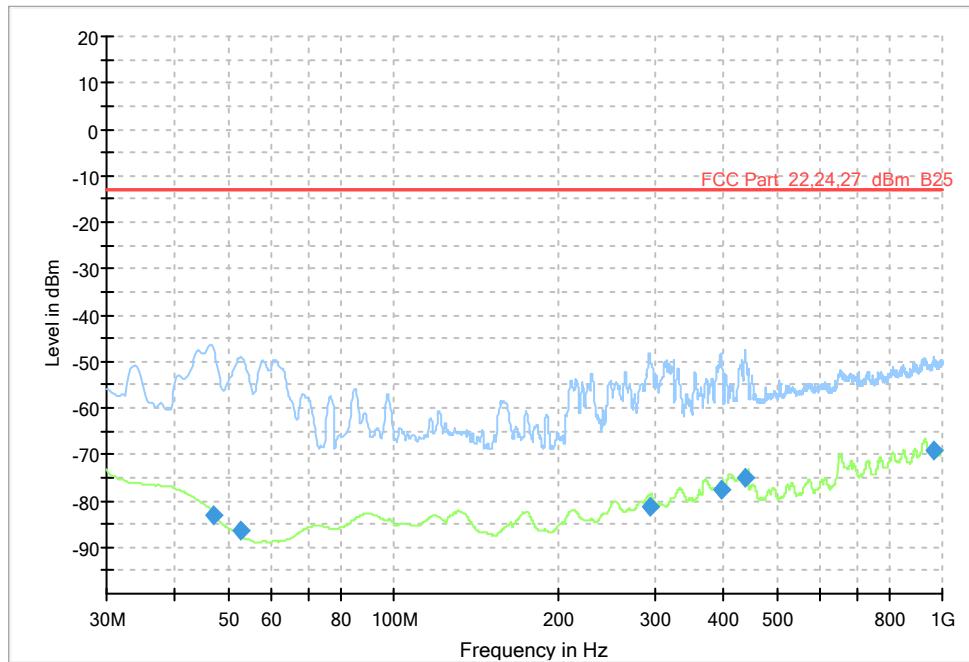


Photo of the test set up 1 GHz – 18 GHz



Photo of the test set up 18 GHz – 22 GHz

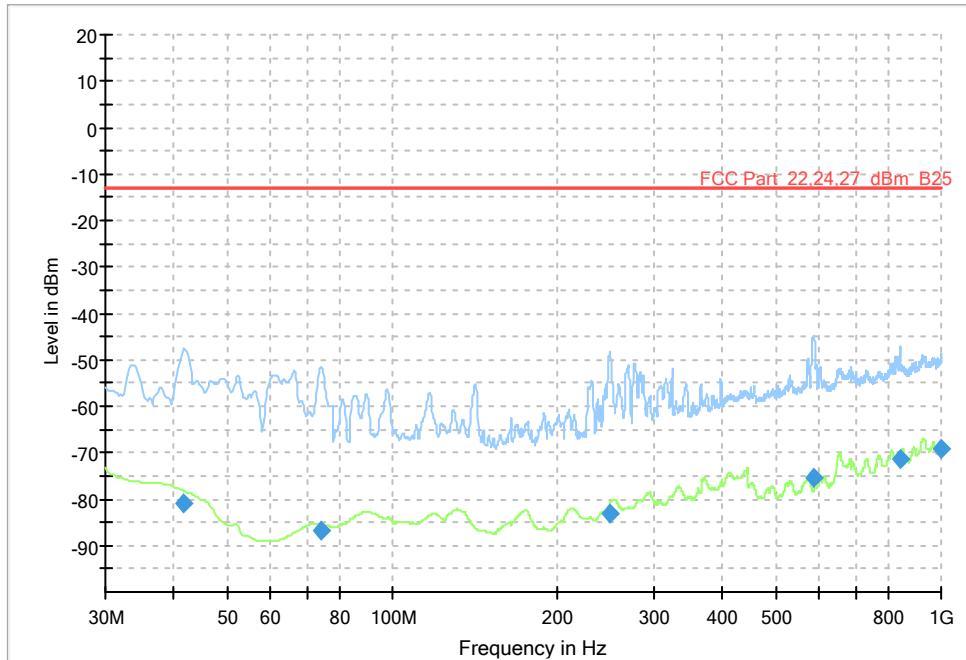
4.3 Test results, 30 – 1000 MHz



Diagram, Peak and average overview sweep, 30 – 1000 MHz, at 3 m distance, configuration C1.

Measurement results, RMS

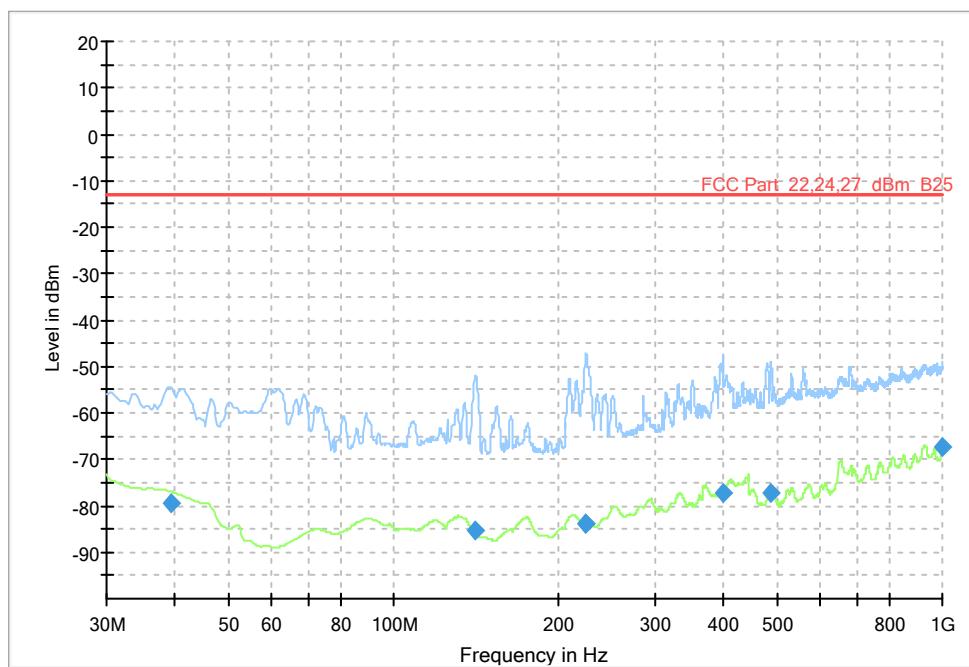
Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol
47.000000	-83.16	-13.00	70.16	1000	186.0	V
52.500000	-86.27	-13.00	73.27	1000	114.0	V
292.500000	-81.34	-13.00	68.34	1000	111.0	V
395.250000	-77.53	-13.00	64.53	1000	318.0	V
437.500000	-75.22	-13.00	62.22	1000	173.0	V
966.500000	-69.12	-13.00	56.12	1000	221.0	V



Diagram, Peak and average overview sweep, 30 – 1000 MHz at 3 m distance, configuration C2.

Measurement results, RMS

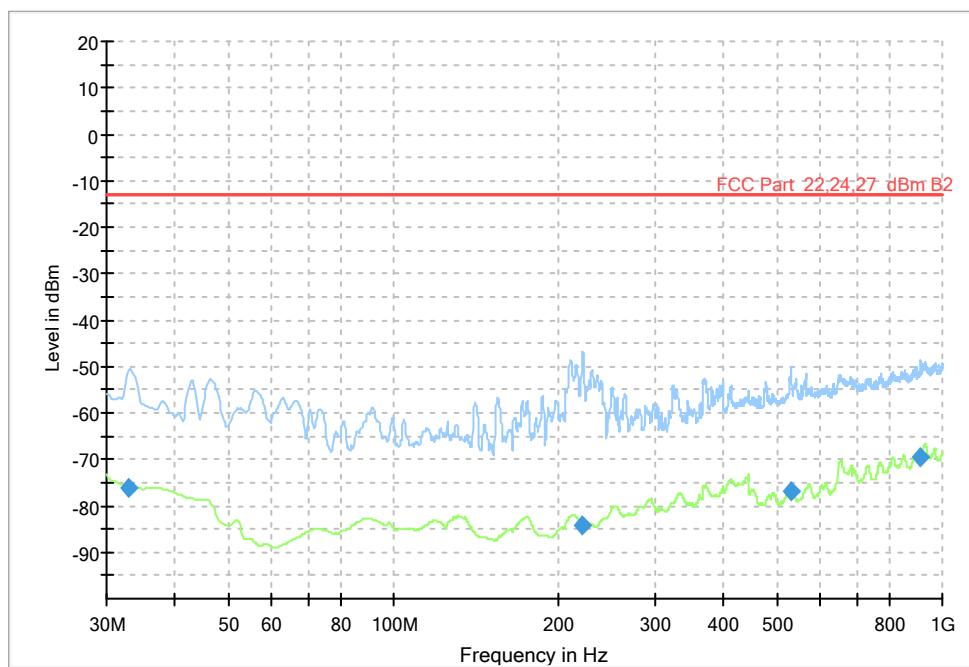
Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol
41.750000	-80.94	-13.00	67.94	1000	127.0	V
74.000000	-86.75	-13.00	73.75	1000	295.0	V
249.000000	-83.14	-13.00	70.14	1000	122.0	V
585.750000	-75.26	-13.00	62.26	1000	162.0	V
843.000000	-71.45	-13.00	58.45	1000	248.0	V
998.000000	-69.28	-13.00	56.28	1000	117.0	H



Diagram, Peak and average overview sweep, 30 – 1000 MHz at 3 m distance, configuration C3.

Measurement results, RMS

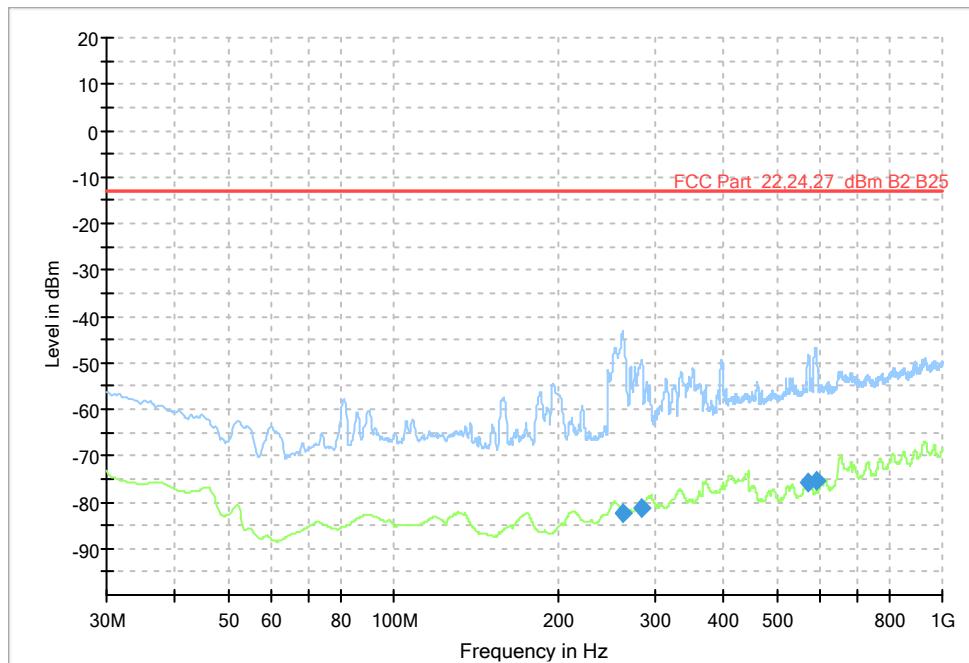
Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol
39.250000	-79.49	-13.00	66.49	1000	261.0	V
141.250000	-85.35	-13.00	72.35	1000	312.0	V
224.000000	-83.86	-13.00	70.86	1000	135.0	V
224.250000	-83.86	-13.00	70.86	1000	301.0	V
400.000000	-77.31	-13.00	64.31	1000	129.0	V
486.750000	-77.24	-13.00	64.24	1000	325.0	V
1000.000000	-67.41	-13.00	54.41	1000	145.0	V



Diagram, Peak and average overview sweep, 30 – 1000 MHz at 3 m distance, configuration C4.

Measurement results, RMS

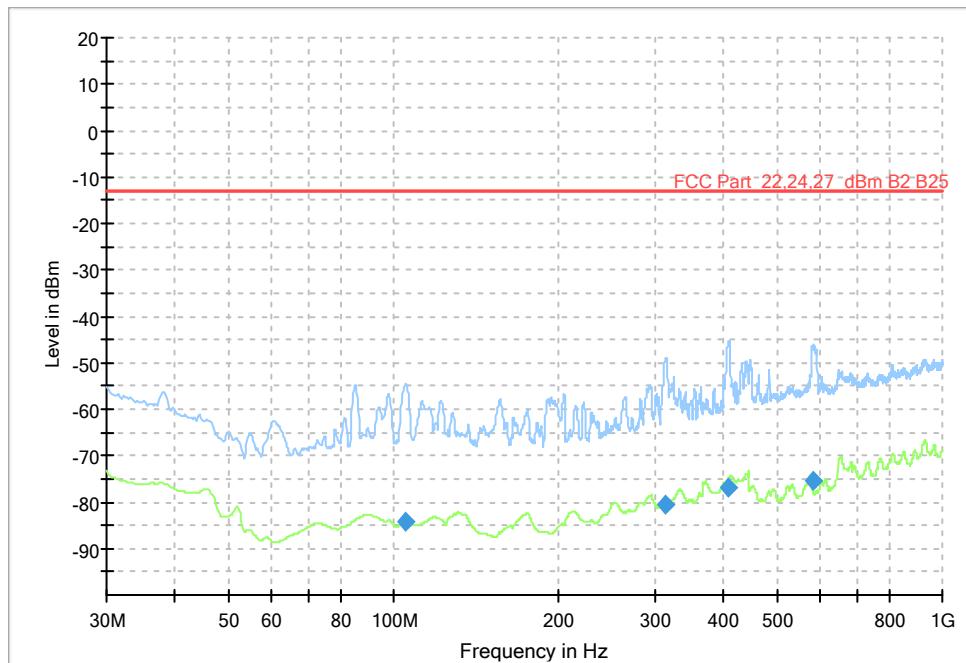
Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol
33.000000	-76.25	-13.00	63.25	1000	107.0	V
221.250000	-84.06	-13.00	71.06	1000	302.0	V
530.500000	-76.83	-13.00	63.83	1000	119.0	V
914.500000	-69.39	-13.00	56.39	1000	188.0	V



Diagram, Peak and average overview sweep, 30 – 1000 MHz at 3 m distance, configuration C5.

Measurement results, RMS

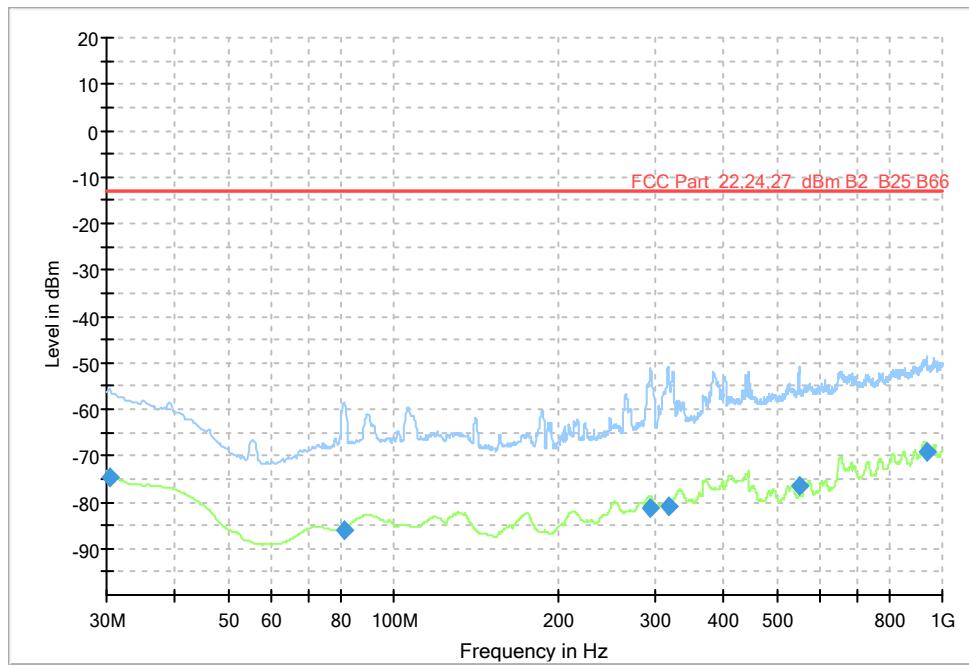
Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
261.500000	-82.20	-13.00	69.20	1000	319.0	V	-66
283.250000	-81.16	-13.00	68.16	1000	148.0	V	-69
569.000000	-75.73	-13.00	62.73	1000	184.0	V	27
588.250000	-75.26	-13.00	62.26	1000	189.0	V	41



Diagram, Peak and average overview sweep, 30 – 1000 MHz at 3 m distance, configuration C6.

Measurement results, RMS

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
105.250000	-84.30	-13.00	71.30	1000	236.0	V	117
313.500000	-80.60	-13.00	67.60	1000	161.0	V	81
408.500000	-76.84	-13.00	63.84	1000	117.0	V	79
583.500000	-75.40	-13.00	62.40	1000	247.0	V	13

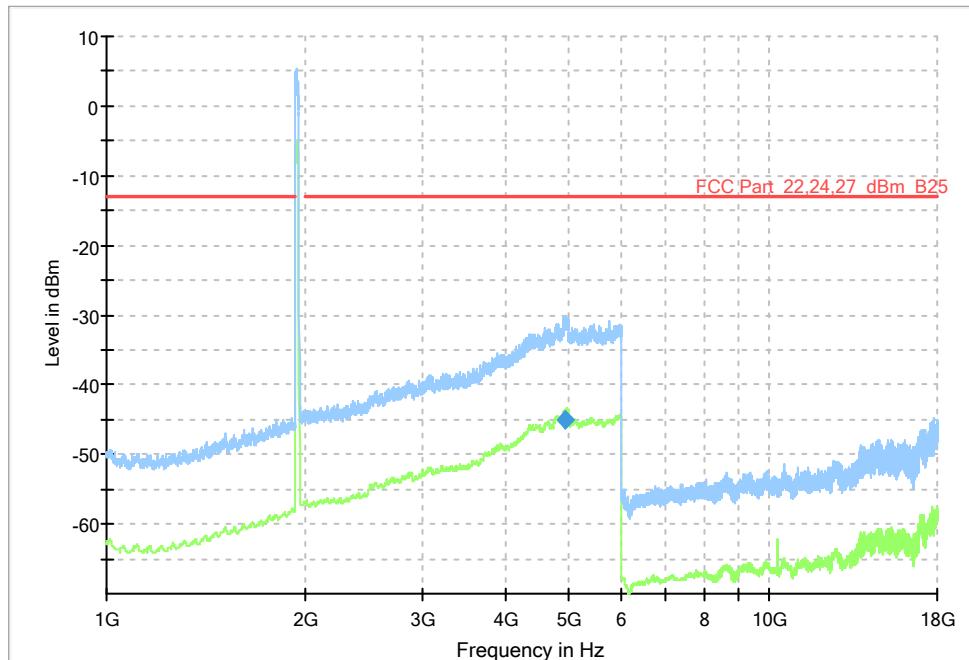


Diagram, Peak and average overview sweep, 30 – 1000 MHz at 3 m distance, configuration C7.

Measurement results, RMS

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
30.500000	-74.71	-13.00	61.71	1000	245.0	H	113
81.250000	-86.01	-13.00	73.01	1000	167.0	V	28
293.750000	-81.37	-13.00	68.37	1000	226.0	V	87
317.000000	-80.74	-13.00	67.74	1000	199.0	V	112
549.250000	-76.43	-13.00	63.43	1000	178.0	V	89
935.000000	-69.24	-13.00	56.24	1000	253.0	H	90

4.4 Test results, 1 – 18 GHz



Diagram, Peak and average overview sweep, 1 – 18 GHz at 3 m distance, configuration C1

Measurement results, RMS

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
4935.500000	-45.12	-13.00	32.12	1000	220.0	H	113

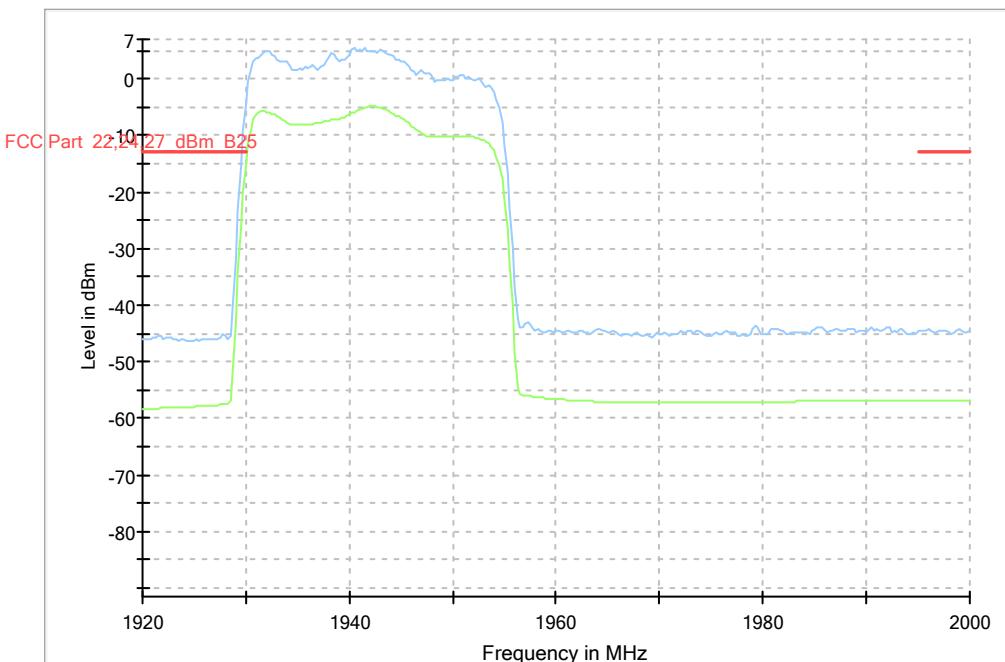
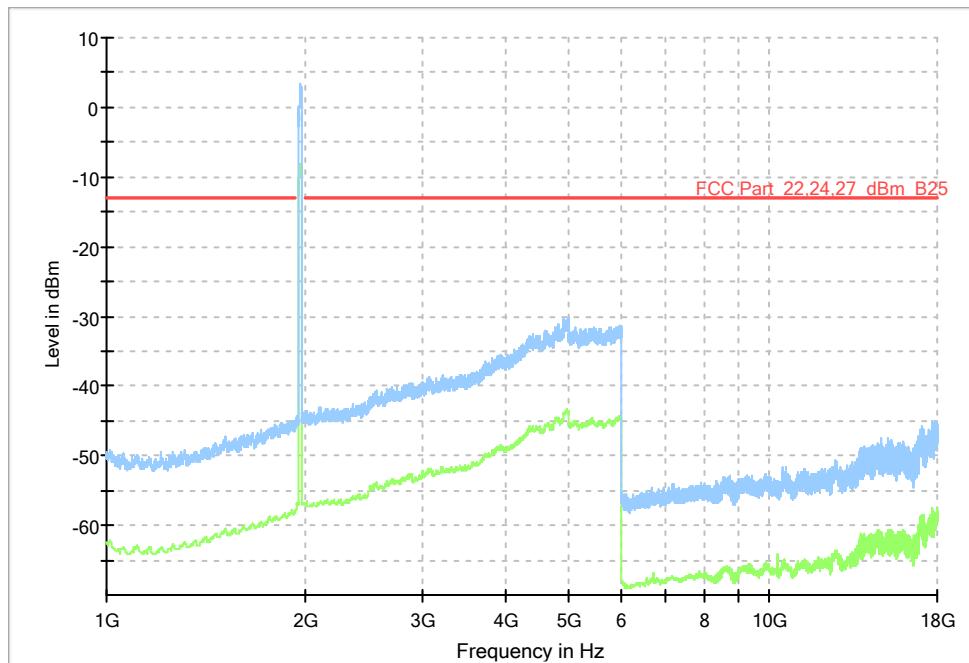


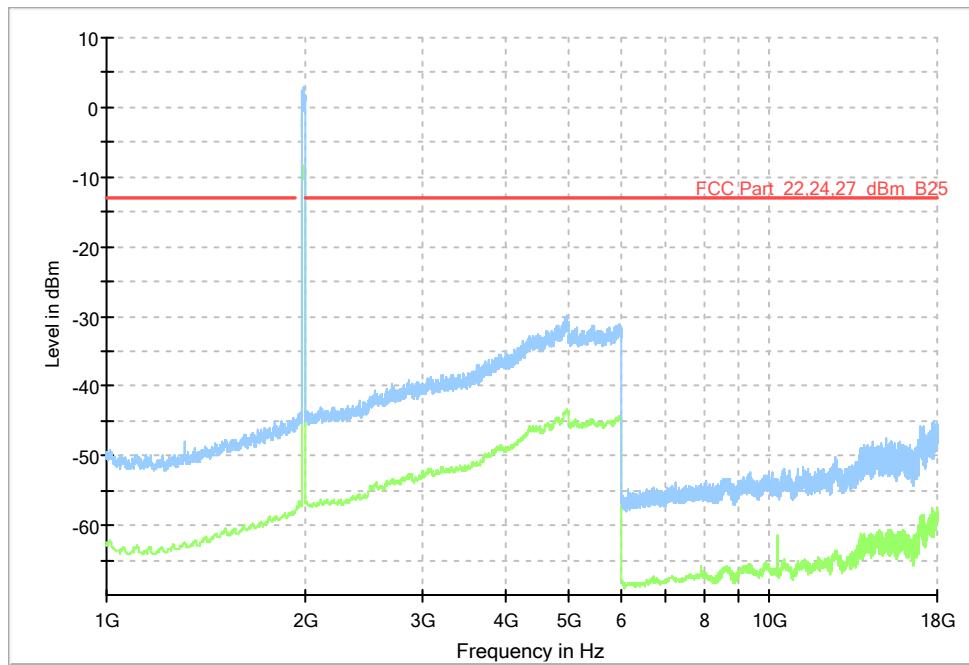
Diagram Zoom, configuration C1



Diagram, Peak and average overview sweep, 1 – 18 GHz at 3 m distance, configuration C2.

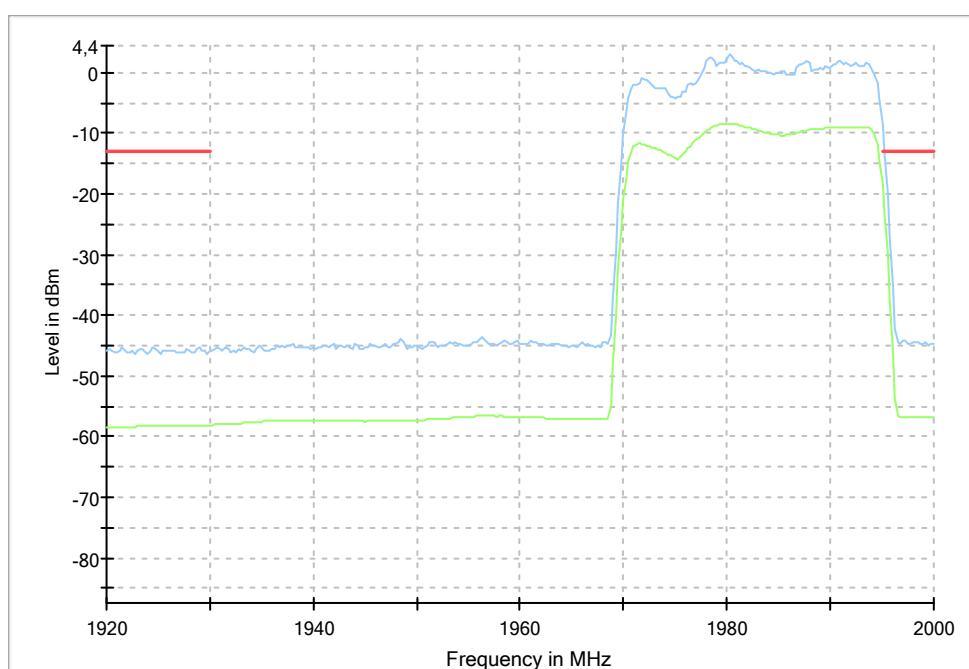
Measurement results, RMS

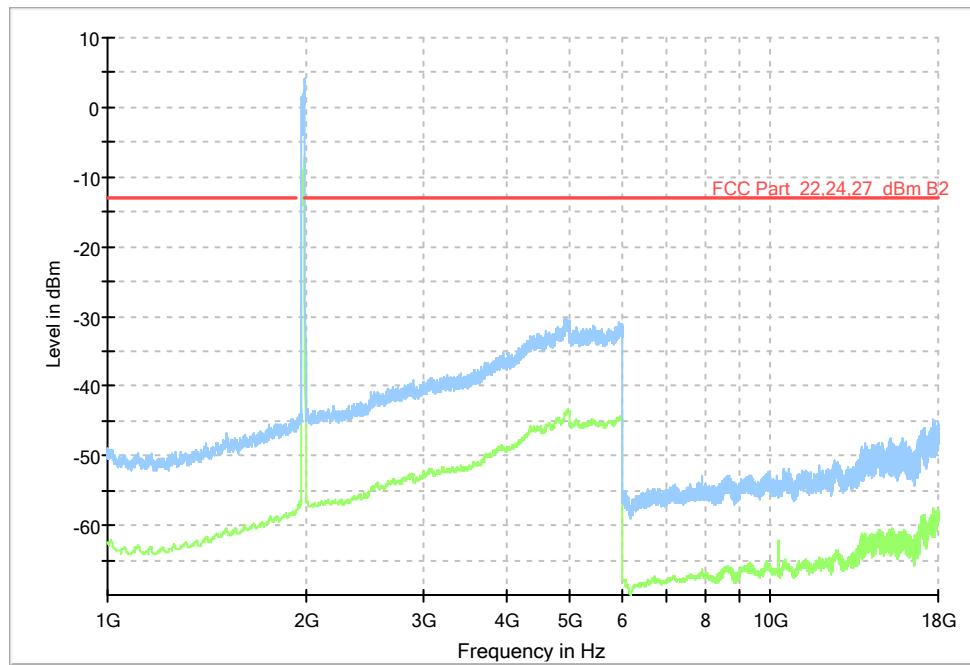
All measured disturbances have a margin of more than 20 dB to the limit.



Measurement results, RMS

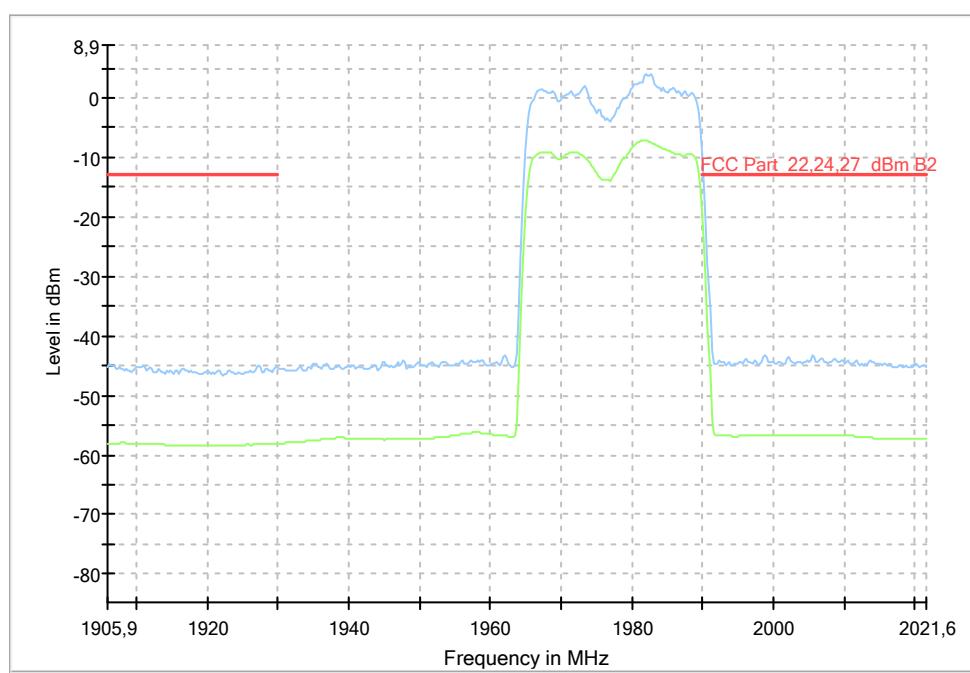
All measured disturbances have a margin of more than 20 dB to the limit.

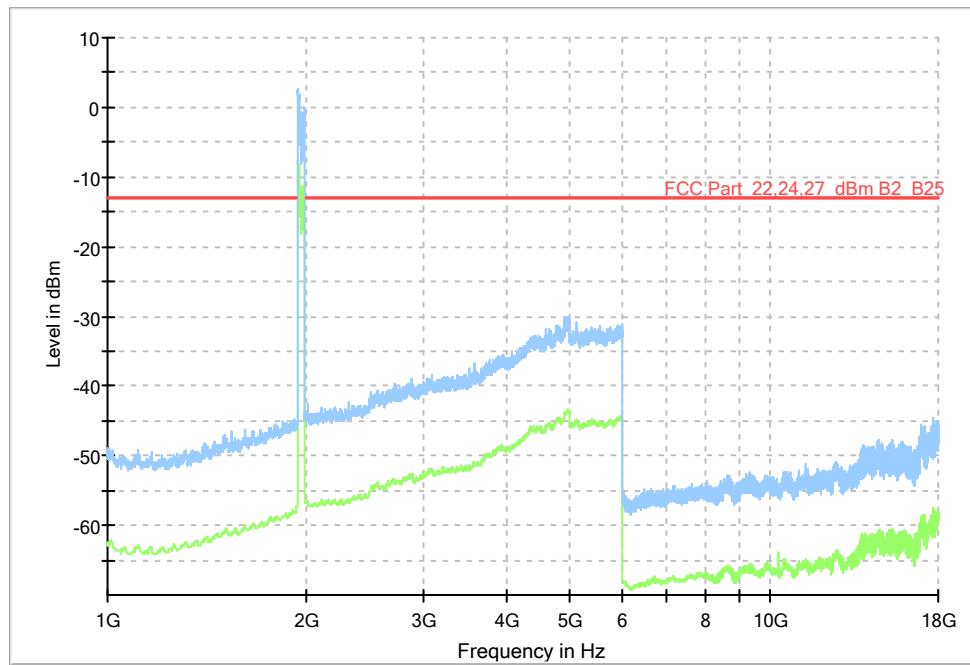




Measurement results, RMS

All measured disturbances have a margin of more than 20 dB to the limit.

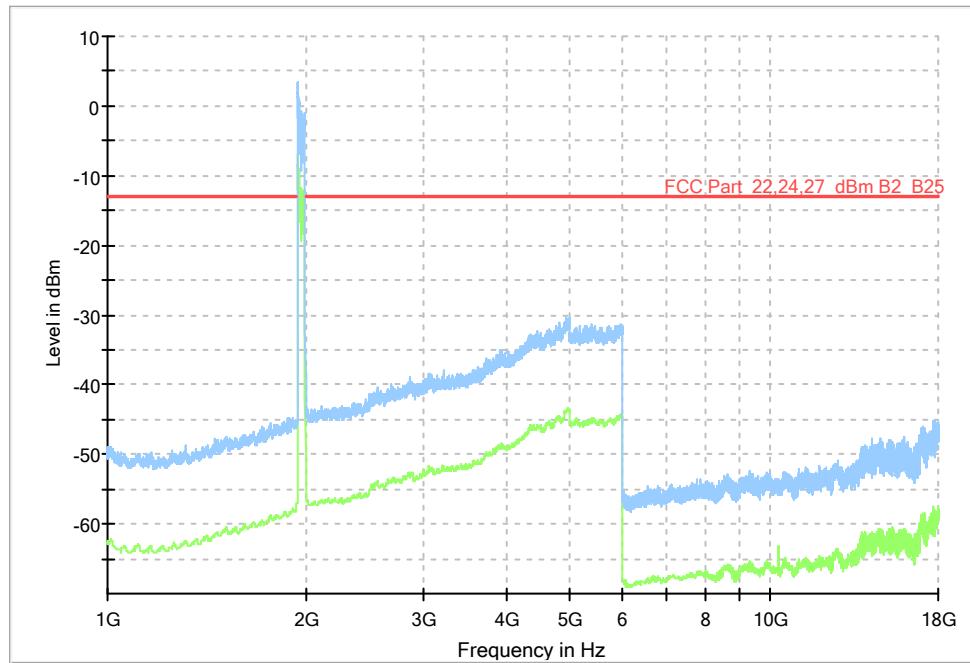




Diagram, Peak and average overview sweep, 1 – 18 GHz at 3 m distance, configuration C5.

Measurement results, RMS

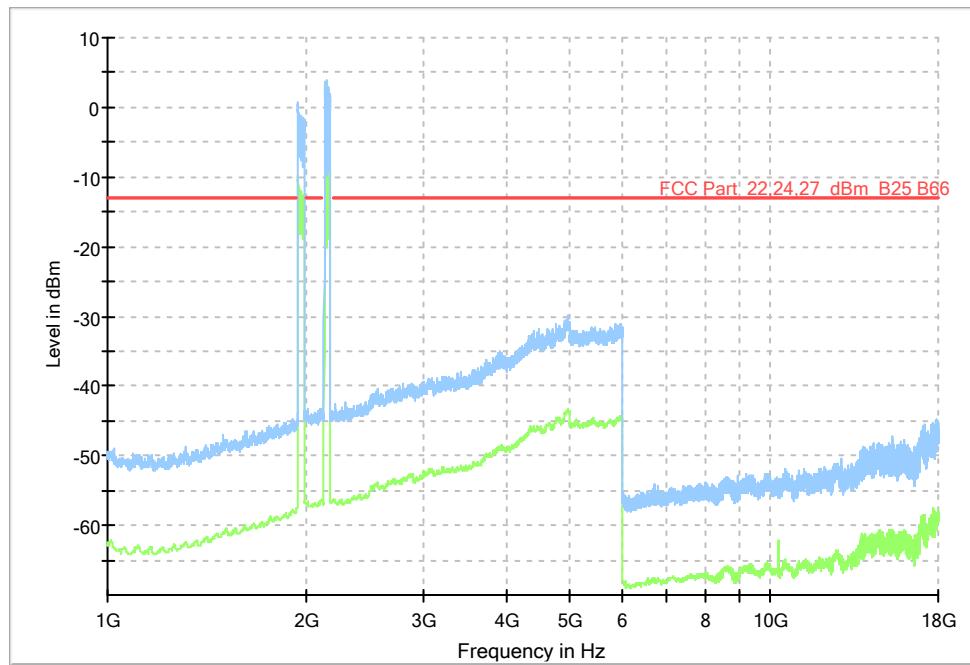
All measured disturbances have a margin of more than 20 dB to the limit.



Diagram, Peak and average overview sweep, 1 – 18 GHz at 3 m distance, configuration C6.

Measurement results, RMS

All measured disturbances have a margin of more than 20 dB to the limit.



Diagram, Peak and average overview sweep, 1 – 18 GHz at 3 m distance, configuration C7.

Measurement results, RMS

All measured disturbances have a margin of more than 20 dB to the limit.

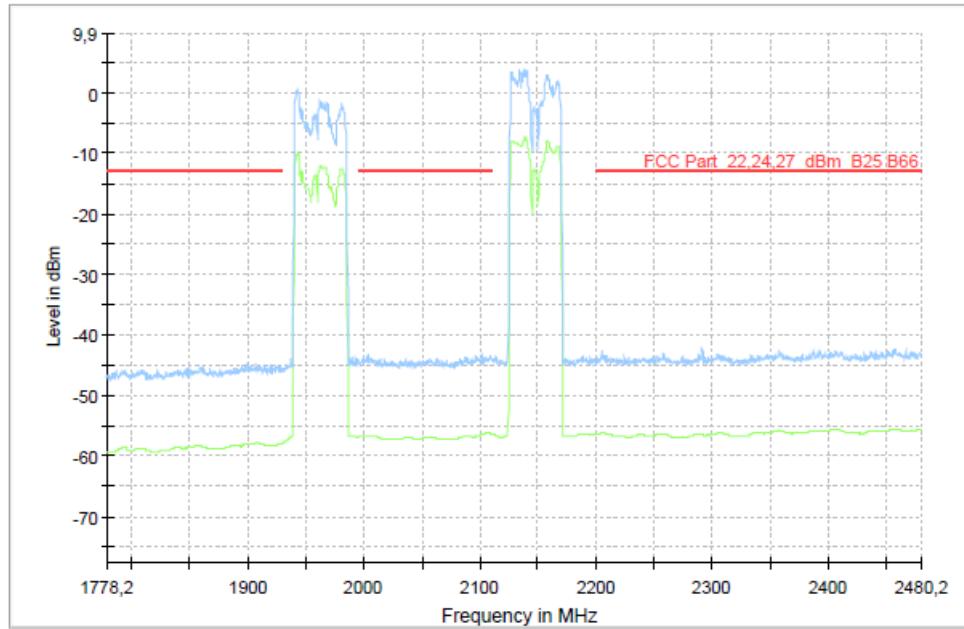
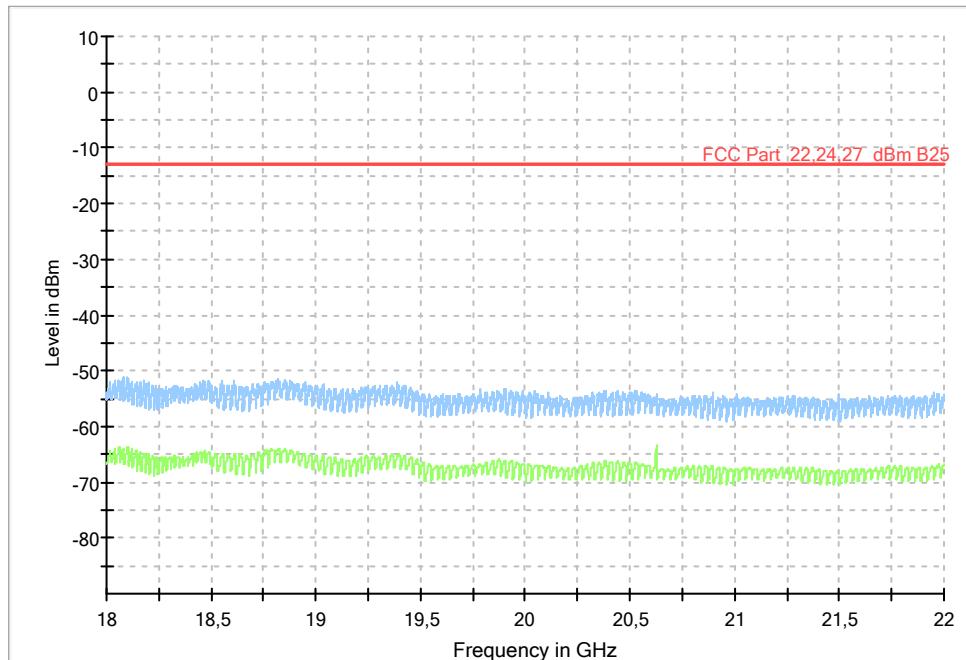


Diagram zoom, configuration C7.

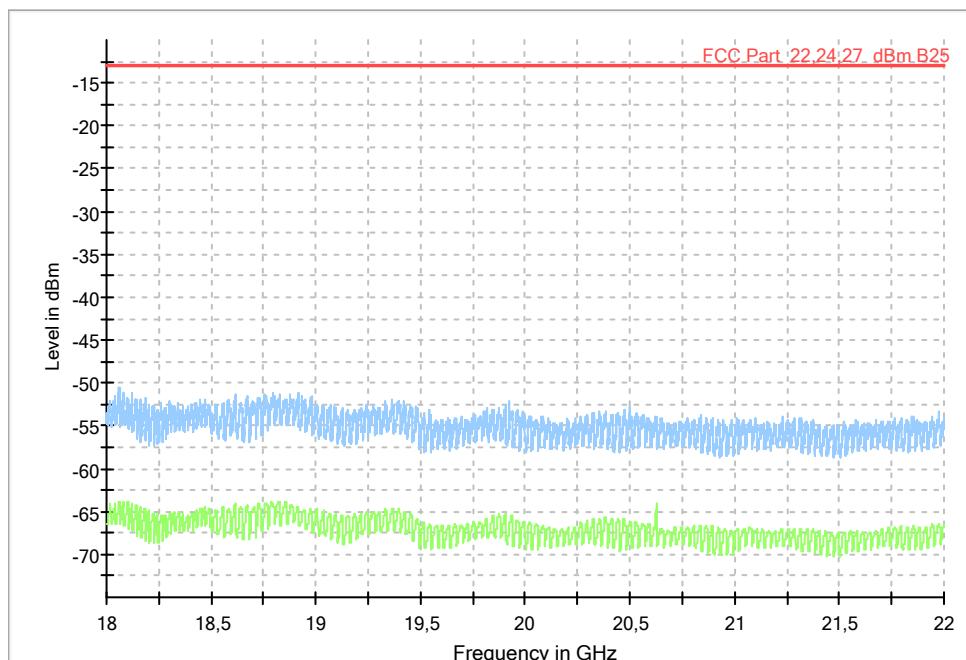
4.5 Test results, 18 – 22 GHz



Diagram, Peak and average overview sweep, 18 – 22 GHz at 3 m distance, configuration C1.

Measurement results, RMS

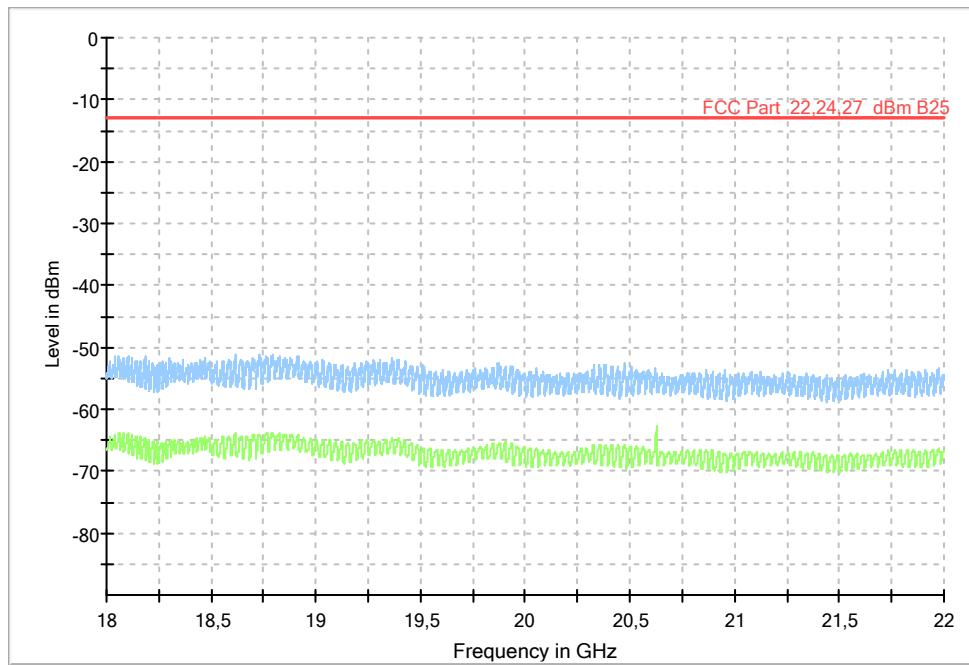
Only noise detected.



Diagram, Peak and average overview sweep, 18 – 22 GHz at 3 m distance, configuration C2.

Measurement results, RMS

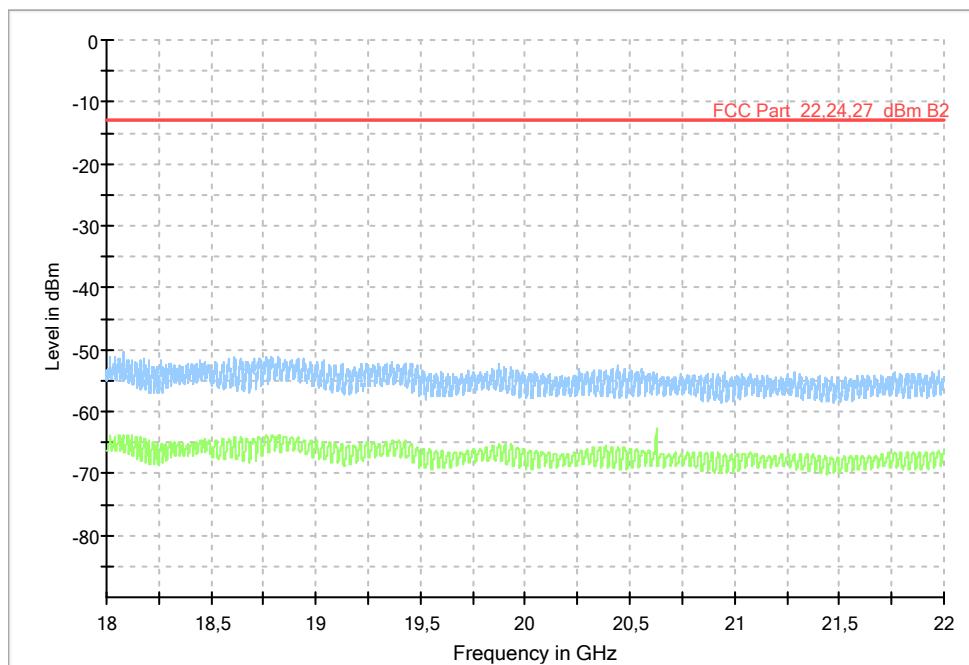
Only noise detected.



Diagram, Peak and average overview sweep, 18 – 22 GHz at 3 m distance, configuration C3.

Measurement results, RMS

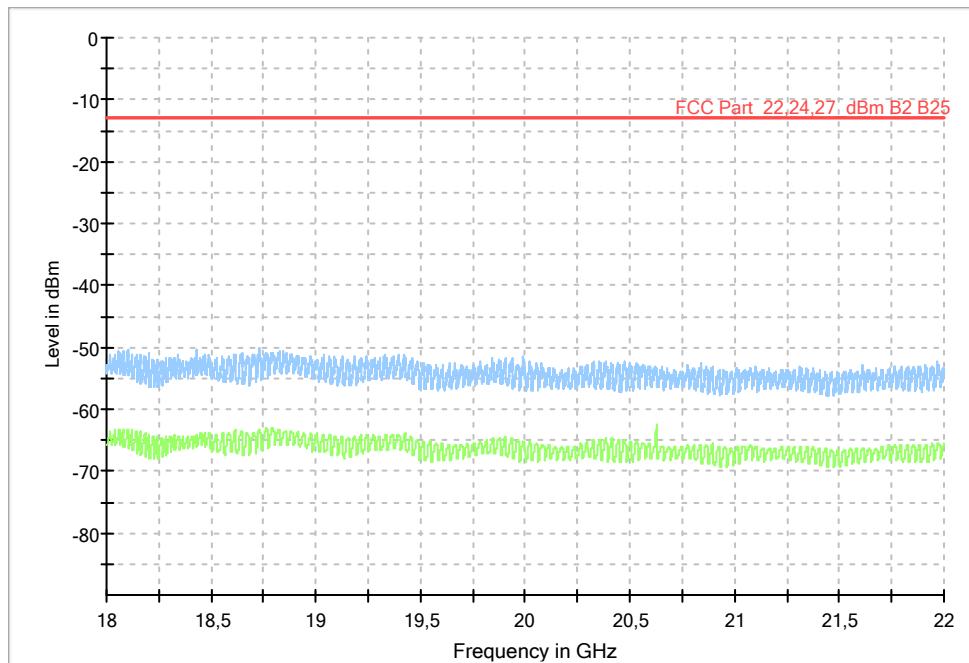
Only noise detected.



Diagram, Peak and average overview sweep, 18 – 22 GHz at 3 m distance, configuration C4.

Measurement results, RMS

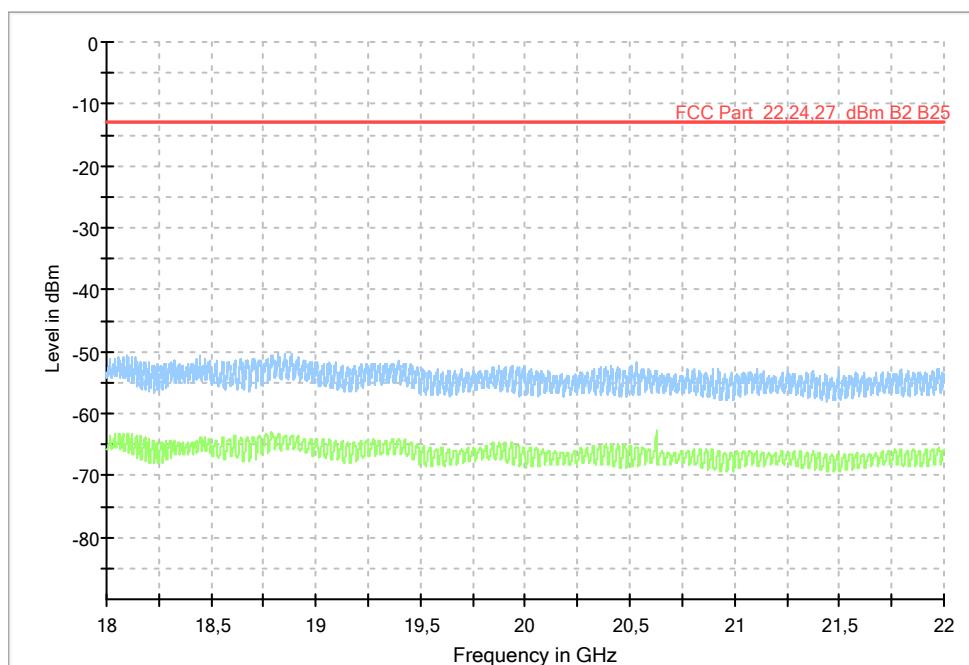
Only noise detected.



Diagram, Peak and average overview sweep, 18 – 22 GHz at 3 m distance, configuration C5.

Measurement results, RMS

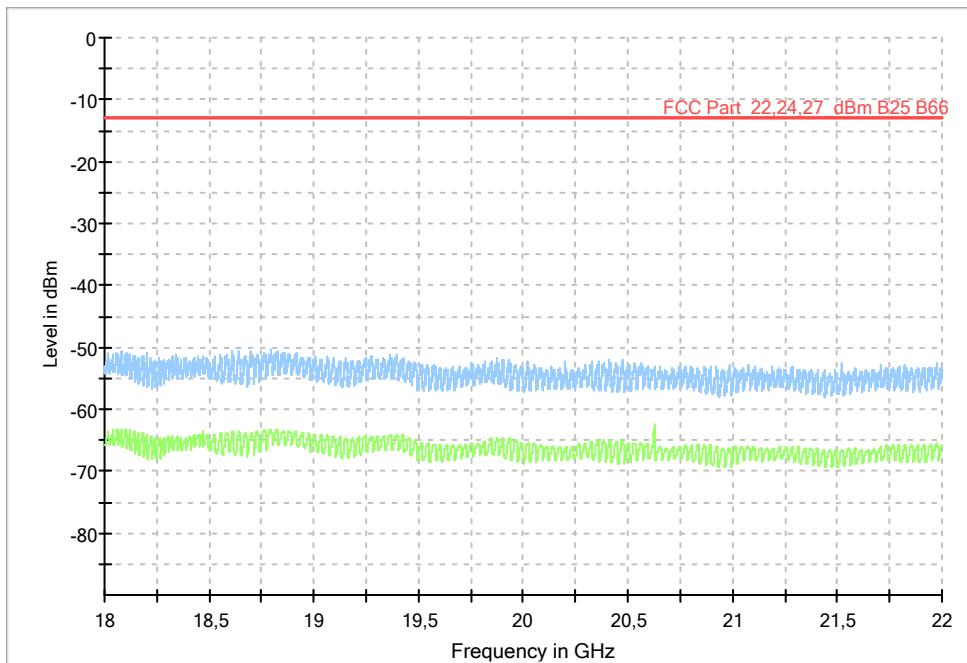
Only noise detected.



Diagram, Peak and average overview sweep, 18 – 22 GHz at 3 m distance, configuration C6.

Measurement results, RMS

Only noise detected.



Diagram, Peak and average overview sweep, 18 – 22 GHz at 3 m distance, configuration C7.

Measurement results, RMS

Only noise detected.

5. TEST EQUIPMENT

Equipment type	Manufacturer	Model	Inv. No.	Last Cal. date	Next Cal. date
Measurement software	Rohde & Schwarz	EMC32 – 11.60.00	--	--	--
Measurement Receiver	Rohde & Schwarz	ESW44	33950	July 02, 2024	1 year
Open switch and control platform	Rohde & Schwarz	OSP130	32298	December 11, 2024	1 year
Horn antenna	Bonn	BLMA 1826-5A	31247	September 13, 2023	3 years
Horn antenna	Bonn	BLMA 2640-5A	31248	September 14, 2023	3 years
Open switch and control platform	Rohde & Schwarz	OSP-F7-B	32299	December 11, 2024	1 year
Coaxial cable	Schuner	SUCOFLEX 104	39003	October 10, 2024	1 year
Coaxial cable	ROSENBERGER	UFB311A	39053	August 26, 2024	1 year
Antenna ultralog	Rohde & Schwarz	HL562	32310	July 17, 2024	2 years
Coaxial cable	Rosenberger	JFB293C	39141	June 1, 2024	1 year
Coaxial cable	Rosenberger	JFB293C	39142	June 1, 2024	1 year
Horn Antenna	Rohde & Schwarz	HF907	32296	May 6, 2024	2 years
Signal path	Rohde & Schwarz	EMI	39150	December 11 2024	1 year
Rotary join	Spinner	BN835027	31807	August 26, 2024	1 year
Preamplifier Signal path	Rohde & Schwarz	TS-PRE1 EMI	32297	July 4, 2024	1 year
Coaxial cable	MEGAPHASE	GC12-K1K1-315	39128	July 2,2024	1 year
Coaxial cable	Huber+suhner	Sucoflex 104 PE	39086	September 4, 2024	1 year
Coaxial cable	MEGAPHASE	GC12-K1K1-149	39233	July 2, 2024	1 year
Coaxial cable	Rosenberger	FA210A (UFA210B)	39204	August 26, 2024	1 year
Coaxial cable	Huber+suhner	SUCOFLEX 104	5179	December 4, 2024	1 years

6. EUT SOFTWARE

Software radio: CXP2021151/1-R24A70

7. EUT HARDWARE LIST

Product	Product No,	R-State	Serial Number
AIR 3283 B25 B66	KRD 901 892/2	R1C	E23F529480
SFP module Ericsson	RDH 102 75/3	R1A	EA61XL17BF
SFP module Ericsson	RDH 102 75/3	R1A	EA61XL17A7