

TEST REPORT

Test Report No.: 1-0090-25-01-07_TR1-R03



Testing Laboratory

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Accredited Test Laboratory:

The testing laboratory (area of testing) is accredited according to DIN EN ISO/IEC 17025 (2018-03) by the Deutsche Akkreditierungsstelle GmbH (DAkKS).
The accreditation is valid for the scope of testing procedures as stated in the accreditation certificate with the registration number: D-PL-12047-01-00.
ISED Testing Laboratory Recognized Listing Number: DE0001
FCC designation number: DE0002

Applicant

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Manufacturer

Riedel Communications GmbH
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Test Standard/s

FCC Part 15, subpart D: 2016 Isochronous UPCS Device 1920 – 1930 MHz
Industry Canada RSS-213, Issue 3: 2 GHz Licence-exempt Personal Communication Service Devices (LE-PCS) 2015

Test Item

Kind of product: Wireless Active Antenna
Product name: BL-ANT-1010-19G
HVIN: BL-ANT-1010-19G
PMN: BL-ANT-1010-19G
FVIN: V3.5.0
HMN: /
FCC ID: YFJANT101019
IC: 8706A-ANT101019
S/N serial number: Radiated: /
Conducted: /
HW hardware status: C20
SW software status: V3.5.0
Frequency [MHz]: 1920 -1930
Type of Modulation: Digital (Gaussian Frequency Shift Keying)
Number of channels: 5 RF Channels, 5x12 = 60 TDMA Duplex Channels
Antenna: 4 antenna ports: A OUT, A IN, B OUT, B IN
Power Supply: 120 V AC/DC adapter
Temperature Range: -20°C to 50°C

Test Report authorised:



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2026-09-04 Wolf, Joachim
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2 General information

2.1 Notes and disclaimer

The test results of this test report relate exclusively to the test item specified in this test report. cetecom advanced GmbH does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item.

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This test report replaces the test report with the number 1-0090-25-01-07_TR1-R02 and dated 2026-06-26.

2.2 Application details

Date of receipt of order:	2026-02-26
Date of receipt of test item:	2026-04-27
Start of test:	2026-04-29
End of test:	2026-05-07
Person(s) present during the test:	

3 Test standard/s:

Test Standard	Version	Test Standard Description
FCC Part 15, subpart D	2016-06	Isochronous UPCS Device 1920 – 1930 MHz
Industry Canada RSS-213, Issue 3	2015-03	2 GHz Licence-exempt Personal Communication Service Devices (LE-PCS)
ANSI C63.17	2013-08	American National Standard for Methods of Measurement of the Electromagnetic and Operational Compatibility of Unlicensed Personal Communication Services (UPCS) Devices
ANSI C63.4	2014-06	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

4 Test Environment

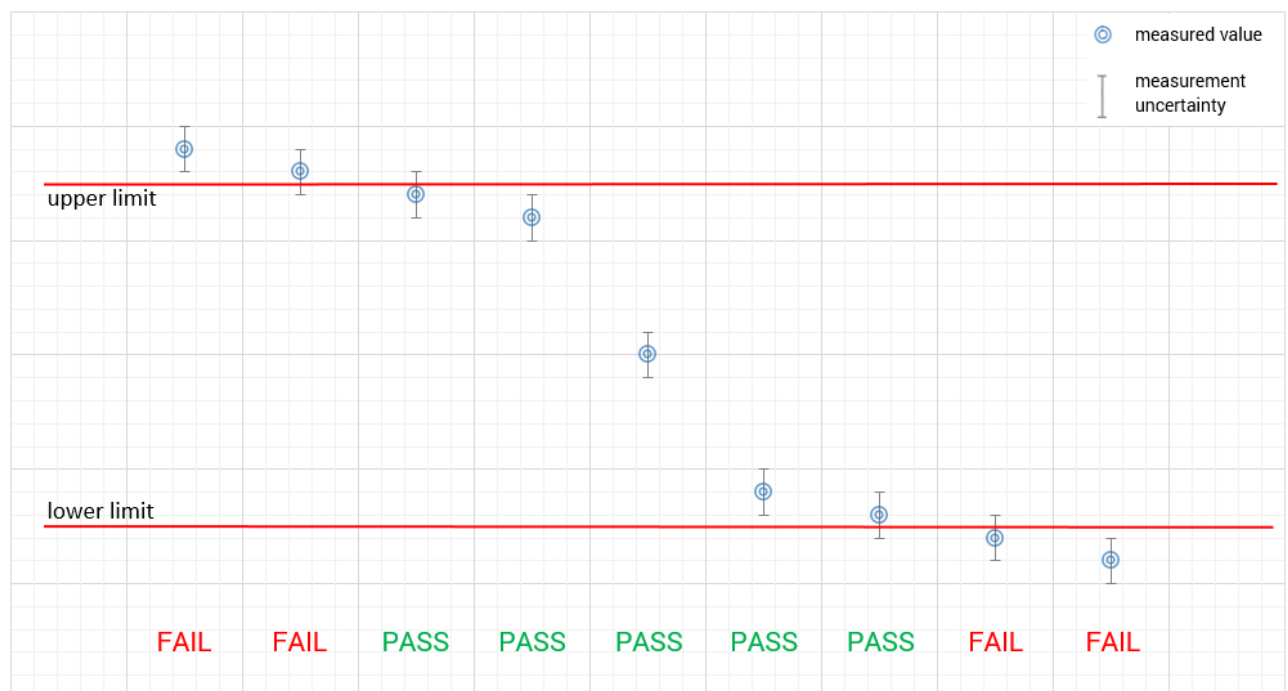
Temperature:	+ 22 °C during room temperature tests + 50 °C during high temperature test - 20 °C during low temperature test
Relative humidity content:	38 %
Air pressure:	not relevant for this kind of testing

5 Reporting statements of conformity – decision rule

Only the measured values related to their corresponding limits will be used to decide whether the equipment under test meets the requirements of the test standards listed in chapter 3.

The measurement uncertainty is mentioned in this test report, see chapter 9, but is not taken into account - neither to the limits nor to the measurement results. Measurement results with a smaller margin to the corresponding limits than the measurement uncertainty have a potential risk of more than 5% that the decision might be wrong."

measured value, measurement uncertainty, verdict



6 Measurement uncertainty

Measurement uncertainty		
Test case	Uncertainty	
Frequency and Timing	$\pm 1 \times 10^{-7}$	
Antenna Gain	± 3 dB	
Conducted Level Measurement	> 10 MHz	± 0.28 dB
	> 3.6 GHz	± 0.39 dB
	> 7.0 GHz	± 1.00 dB
	> 13.6 GHz	± 1.32 dB
Spurious emissions radiated below 30 MHz	± 3 dB	
Spurious emissions radiated 30 MHz to 1 GHz	± 3 dB	
Spurious emissions radiated 1 GHz to 12.75 GHz	± 3.7 dB	
Spurious emissions radiated above 12.75 GHz	± 4.5 dB	
Spurious emissions conducted below 30 MHz (AC conducted)	± 2.6 dB	

7 Summary of Measurement Results

☒	No deviations from the technical specifications were ascertained
☐	There were deviations from the technical specifications ascertained

CFR 47 Part 15 UPCS

Name of test	FCC CFR 47 Paragraph	IC RSS-213 Paragraph	Verdict
Digital Modulation Techniques	15.319(b)	6.1	not tested
Labeling requirements	15.19(a)(3)	RSS-GEN 5.2	not tested
Antenna requirements	15.317, 15.203	4.1(e)	not tested
Power Line Conducted Emission	15.107(a), 15.207(a)	6.3 RSS GEN 7.2.2	not tested
Emission Bandwidth	15.323(a)	6.4	not tested
In-band Emission	15.323(d)	6.7.2	not tested
Out-of-band Emissions	15.323(d)	6.7.1	not tested
Peak Transmit Power	15.319(c)(e), 15.31(e)	6.5	Complies
Power Spectral Density	15.319(d)	4.3.2.1	not tested
Automatic discontinuation of transmission	15.319(f)	4.3.4(a)	not tested
Carrier frequency stability	15.323(f)	6.2	not tested
Frame repetition stability	15.323(e)	4.3.4(c)	not tested
Frame period and jitter	15.323(e)	4.3.4(c)	not tested
Monitoring threshold, Least interfered channel	15.323(c)(2);(5); (9)	4.3.4(b)	not tested
Monitoring of intended transmit window and maximum reaction time	15.323(c)(1)	4.3.4	not tested
Threshold monitoring bandwidth	15.323(c)(7)	4.3.4	N/A
Reaction time and monitoring interval	15.323(c)(1);(5); (7)	4.3.4	not tested
Access criteria test interval	15.323(c)(4);(6)	4.3.4	not tested
Access criteria functional test	15.323(c)(4);(6)	4.3.4	not tested
Acknowledgments	15.323(c)(4)	4.3.4	not tested
Transmission duration	15.323(c)(3)	4.3.4	N/A ¹
Dual access criteria	15.323(c)(10)	4.3.4	N/A ¹
Alternative monitoring interval	15.323(c)(10);(11)	4.3.4	N/A ²
Spurious Emissions (Antenna Conducted)	15.323(d)	6.7.1	not tested
Spurious Emissions (Radiated)	15.319(g), 15.109(a), 15.209(a)	4.3.3 RSS-GEN 7.2.3	not tested
Receiver Spurious Emissions	N/A	6.8	not tested

¹ Only applicable for EUT that can initiate a communication link

² The client declares that the tested equipment does not implement this provision

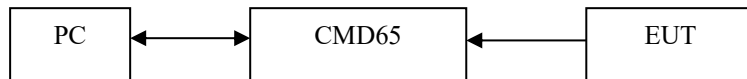
³ The tested equipment has integrated antennas only

⁴ Only requirement FCC 15.109 for unintentional radiators was tested radiated

8 Test Set-up

8.1 Frequency Measurements

Test Set-up 1:

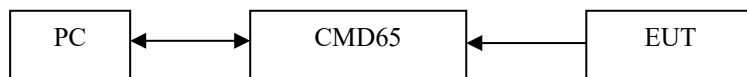


This setup is used for measuring Carrier Frequency Stability at nominal and extreme temperatures.

For long term Frequency Stability, the EUT was in loopback-mode and was controlled with the CMD65, the modulation pattern was set to 01010101....

8.2 Timing Measurements

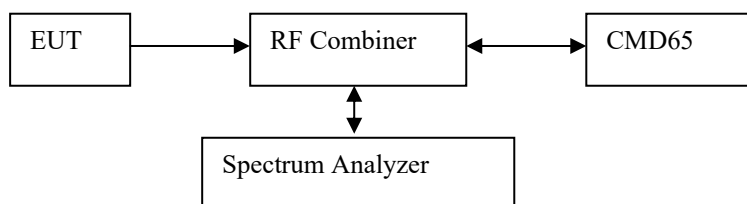
Test Set-up 2:



This setup is used for measuring Frame Repetition Stability, Frame Period and Jitter.

8.3 Conducted Emission Test

Test Set-up 3:



This setup is used for all conducted emission tests.

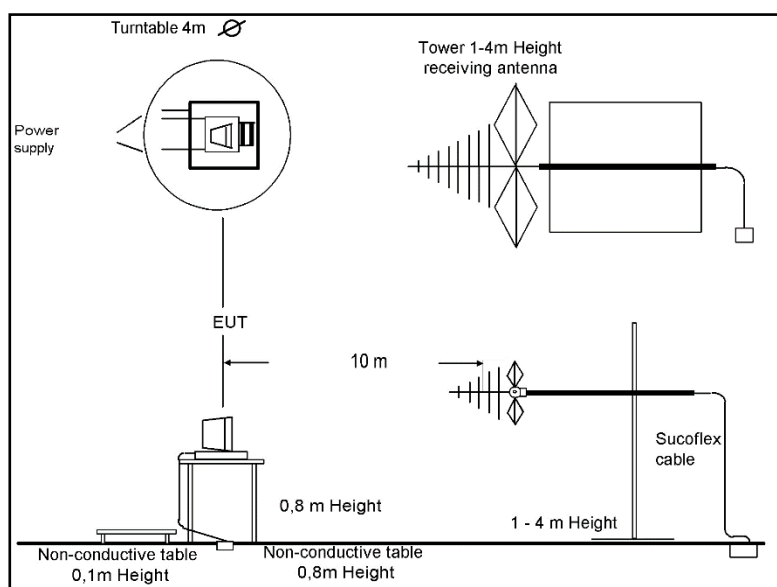
The EUT was in loopback-mode and was controlled with the CMD65, the modulation pattern was set to Pseudo-Random bit sequence to simulate normal speech.

30 MHz – 1GHz:

- The equipment is set up to simulate normal operation mode as described in the user manual or defined by the manufacturer.
- If the EUT is a tabletop system, a non conducting table with 0.8 m height is used, which is placed on the ground plane.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Auxiliary equipment and cables are positioned to simulate normal operation conditions as described in ANSI C 63.4.
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- Measurement distance is 10 m or 3 m (see ANSI C 63.4) – see test details.
- EUT is set into operation.

- The turntable rotates from 0° to 315° using 45° steps.
- The antenna is polarized vertical and horizontal.
- The antenna height changes from 1 m to 3 m.
- At each turntable position, antenna polarization and height the analyzer sweeps three times in peak to find the maximum of all emissions.

- The final measurement is performed for at least six highest peaks according to the requirements of the ANSI C63.4.
- Based on antenna and turntable positions at which the peak values are measured the software maximize the peaks by changing turntable position $\pm 45^\circ$ and antenna height between 1 and 4 m.
- The final measurement is done with quasi-peak detector (as described in ANSI C 63.4).
- Final levels, frequency, measuring time, bandwidth, antenna height, antenna polarization, turntable angle, correction factor, margin to the limit and limit are recorded. A plot with the graph of the premeasurement with marked maximum final results and the limit is stored.



1GHz – 10 GHz:**Test Set-up 5:**

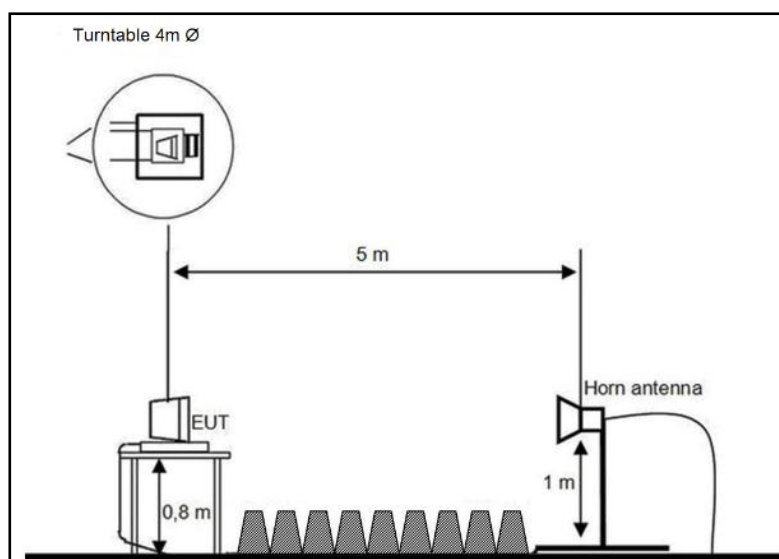
- The Equipment was setup to simulate a typical usage like described in the user manual / or described by manufacturer.
- If the EUT is a tabletop system, a non conducting table with 0,8 m height is used, which is placed on the ground plane.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions as described in ANSI C 63.4.
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is: (see ANSI C 63.4)
 - < 18 GHz = 3 m
 - 18-26 GHz = 1,5 m
 - 26-40 GHz = 0,75 m
- The EUT was set into operation.

Premeasurement

- The turntable rotates continuous from 0° to 360°
- The antenna is polarized vertical and horizontal.
- In accordance to the antenna beam and the size of the EUT the antenna height changes in 30 cm steps, start at 1 meter. If it is not possible to tilt the emissions will be checked with a manually tilted antenna from top side.
- The analyzer scans quickly to find the maximum emissions of the EUT

Final measurement

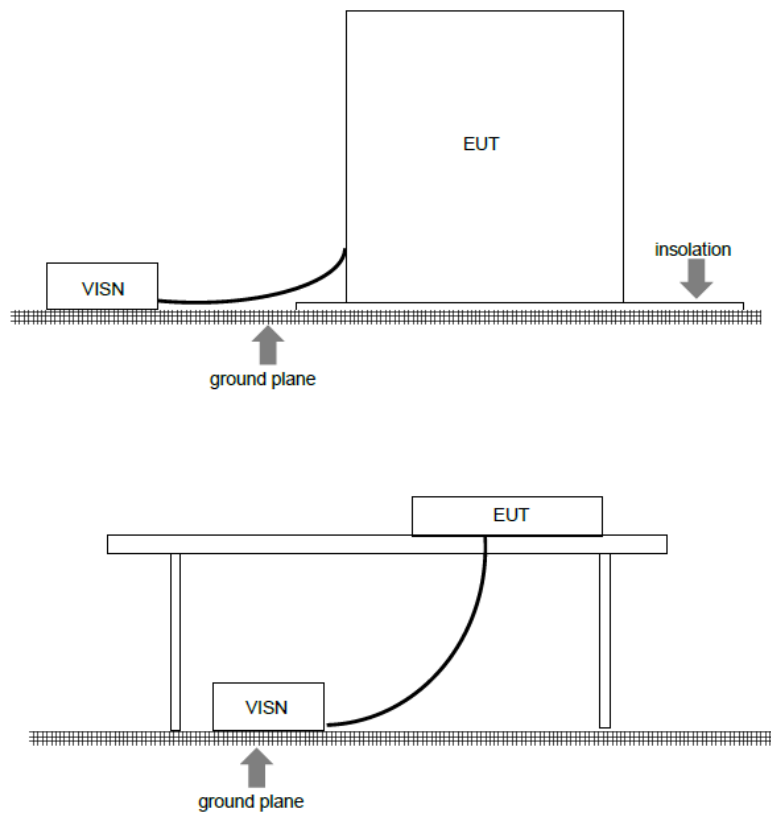
- The final measurement will be performed with minimum the six highest peaks (depends on emissions and number of measured points below 1 GHz)
- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable position ($\pm 45^\circ$) and antenna movement between 1 and 4 meter.
- The final measurement will be done with AV (Average / see ANSI C 63.4) detector
- The final levels, frequency, measuring time, bandwidth, antenna height, antenna polarization, turntable angle, correction factor, margin to the limit, and limit will be recorded. Also a plot with the graph of the premeasurement with marked maximum final measurements and the limit will be stored.



8.5 Power Line Conducted Emissions Test

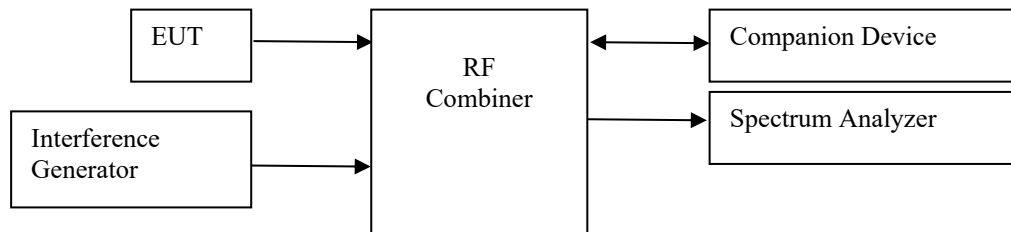
Test Set-up 6:

According to EMC basic standard **ANSI C 63.4**



8.6 Monitoring Tests

Test Set-up 6:

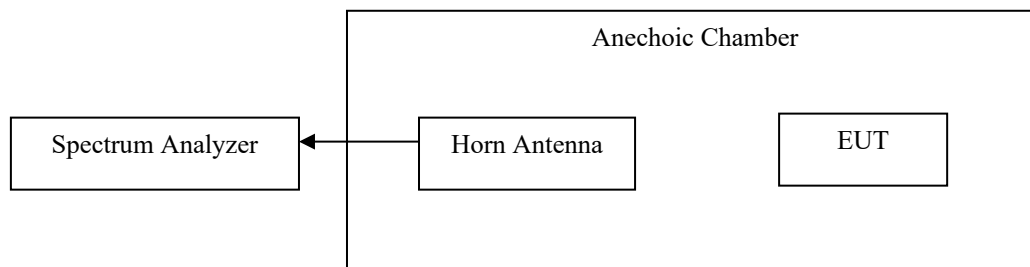


This test setup is used for all Monitoring and Time and Spectrum Access Procedure tests. The path loss from the signal generator to the EUT is measured with a power meter before the testing is started.

A clock signal is used to synchronize the Interference Generator to the start of the DECT frame, this signal always comes from the base station. If the EUT is a DECT Portable Part (i.e. a handset) the clock signal will come from the Companion Device.

8.7 Radiated Output Power Test

Test Set-up 7:



This setup is used for measuring the radiated output power in a fully anechoic chamber with a measurement distance of 1m.

9 Detailed Test Results

9.1 Peak Power Output

Measurement Procedure:

ANSI C63.17, clause 6.1.2.

Test Results: Pass

Measurement Data:

Maximum Conducted Output Power antenna 0

Channel No.	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Maximum Radiated Output Power (dBm)	Maximum Antenna Gain (dBi)
4	1921.536	13.44	21.44	8.0
2	1924.992	13.44	21.44	8.0
0	1928.448	13.42	21.42	8.0

Maximum Conducted Output Power antenna 1

Channel No.	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Maximum Radiated Output Power (dBm)	Maximum Antenna Gain (dBi)
4	1921.536	13.05	21.05	8.0
2	1924.992	12.95	20.95	8.0
0	1928.448	12.94	20.94	8.0

For this test it was also checked that the input voltage variation of 85 and 115% of nominal value did not have any effect on the measured output power, neither radiated nor conducted.

Limit:

The initial bandwidth and calculated limits are extracted from test report no. 1-3010/16-01-10:

Conducted: $100 \mu\text{W} \times \text{SQRT}(B)$ where B is the measured Emission Bandwidth in Hz
 FCC 15.319(c)(e): 20.8 dBm
 RSS-213, Issue 2: 20.4 dBm

The antenna gain in this new test report is 12 dBi. But the antenna is only used with a 4 dB attenuator, therefore the antenna gain is 8 dBi. This means the conducted power limits are reduced to:

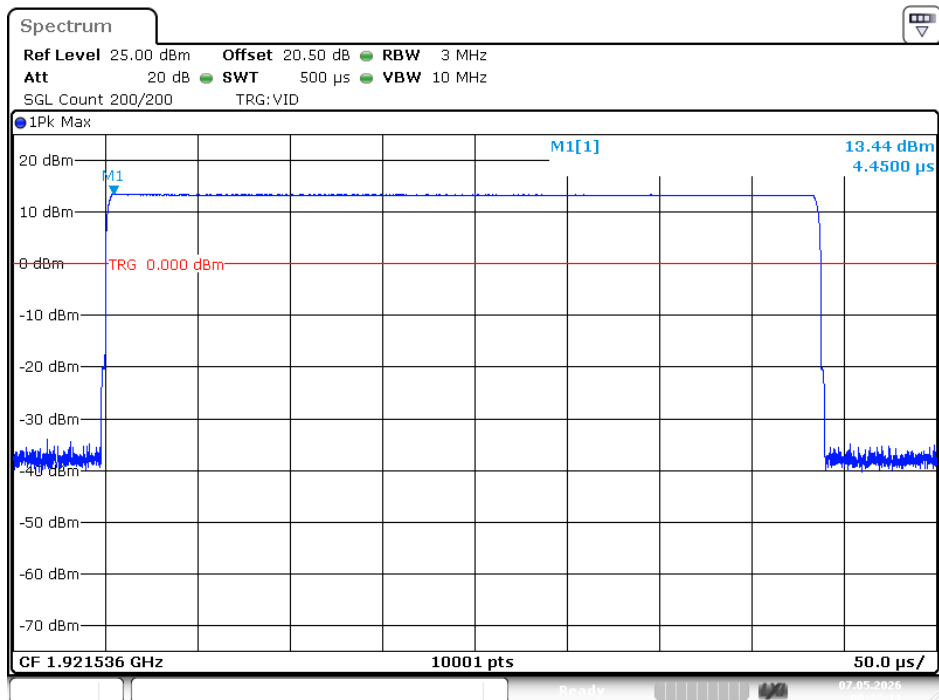
FCC 15.319(c)(e): 15.8 dBm
 RSS-213, Issue 2: 15.4 dBm

Requirements: FCC 15.319(c)(e). RSS-213, Issue 2

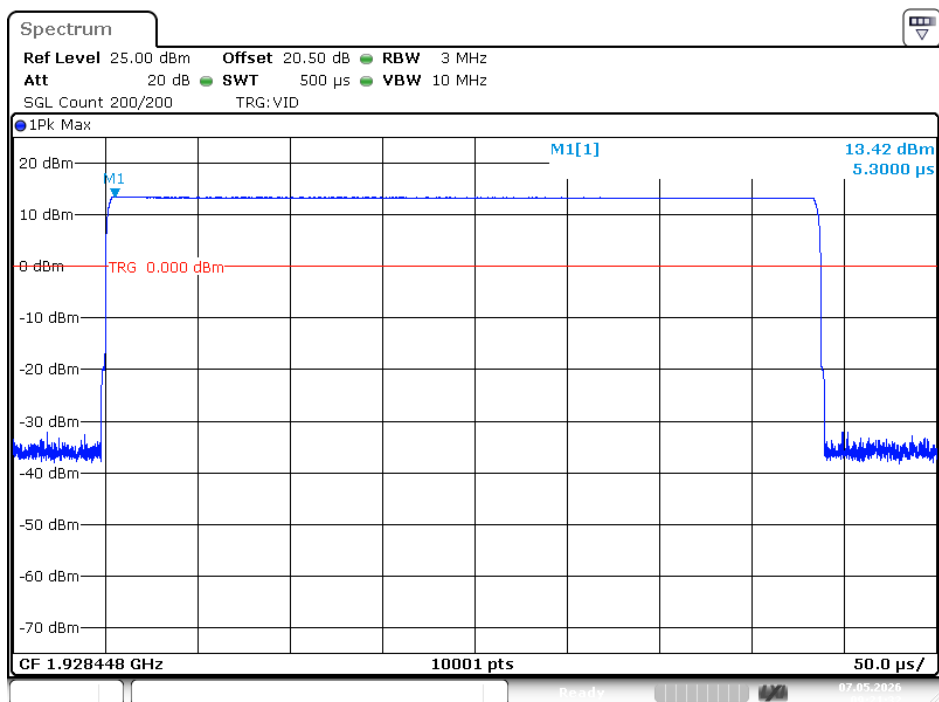
Peak transmit power shall not exceed 100 microwatts multiplied by the square root of the emission bandwidth in Hertz.

The peak transmit power shall be reduced by the amount in decibels that the maximum directional gain of the antenna exceeds 3 dBi.

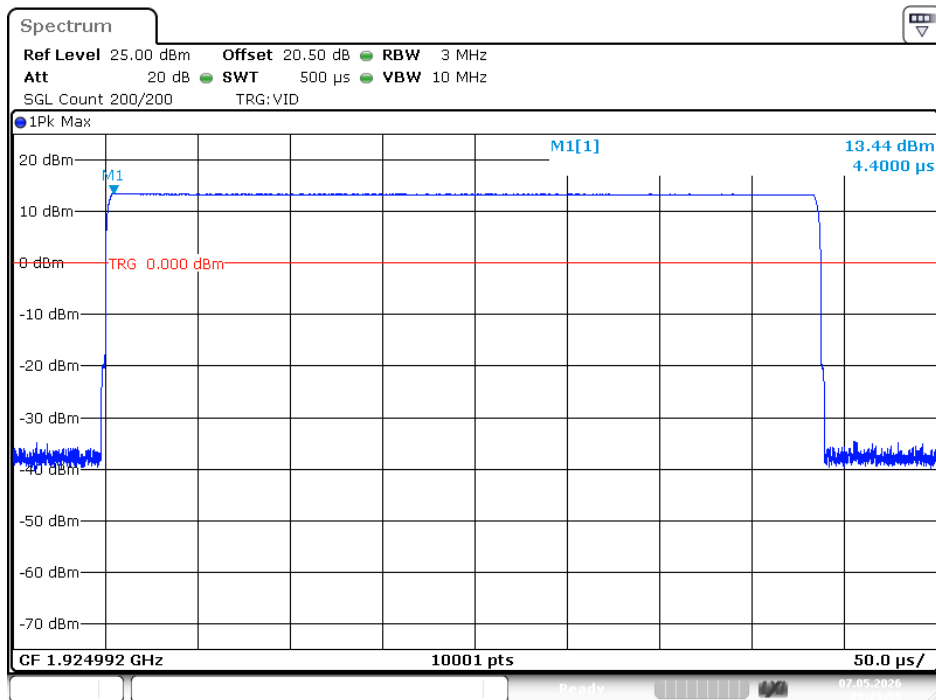
Conducted Peak Output Power antenna 0



Lower Channel

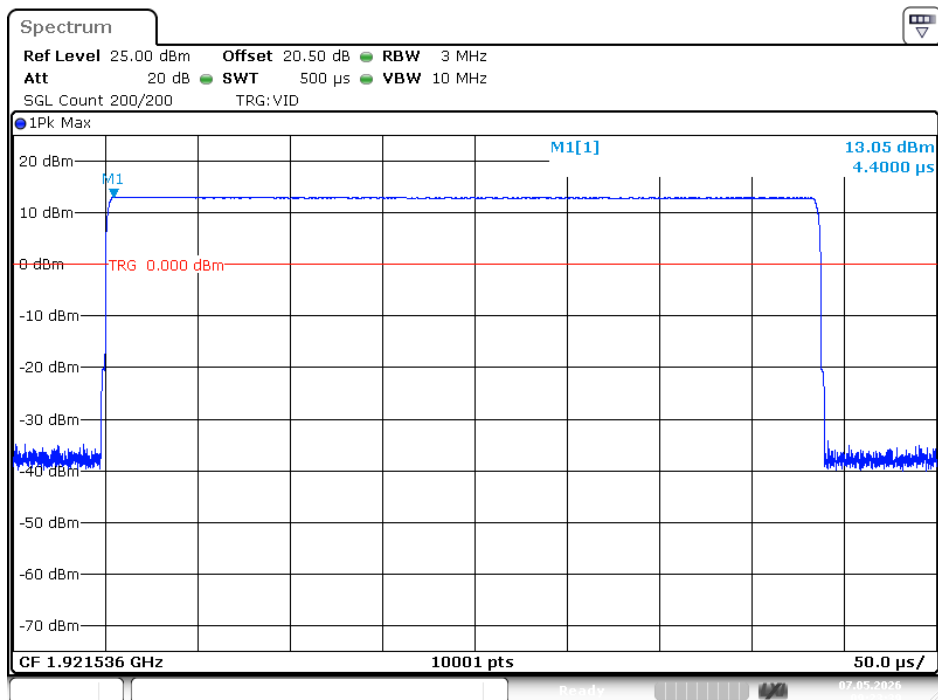


Upper Channel

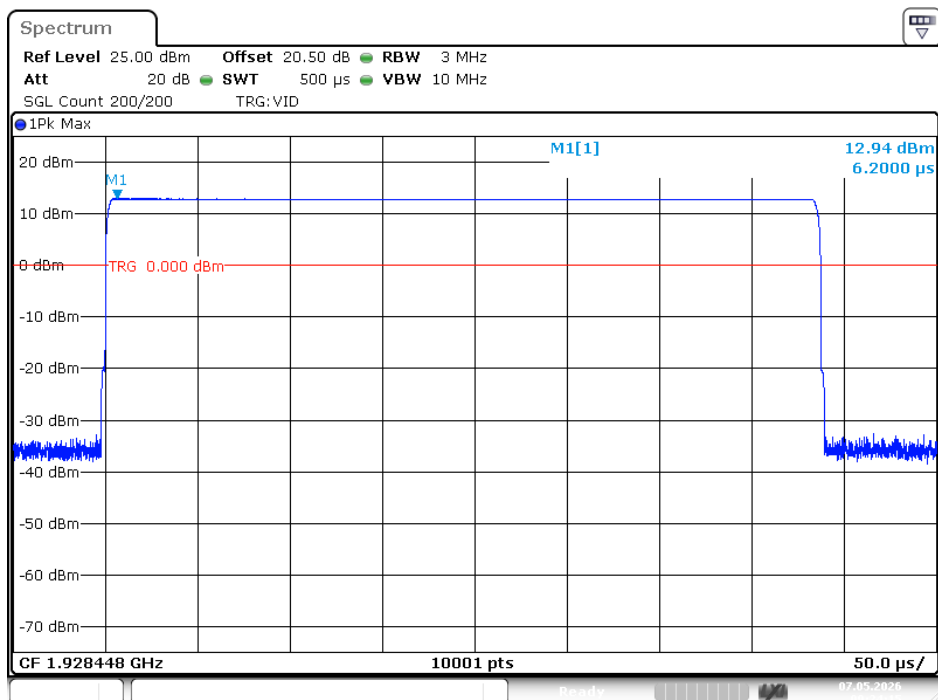


Middle Channel

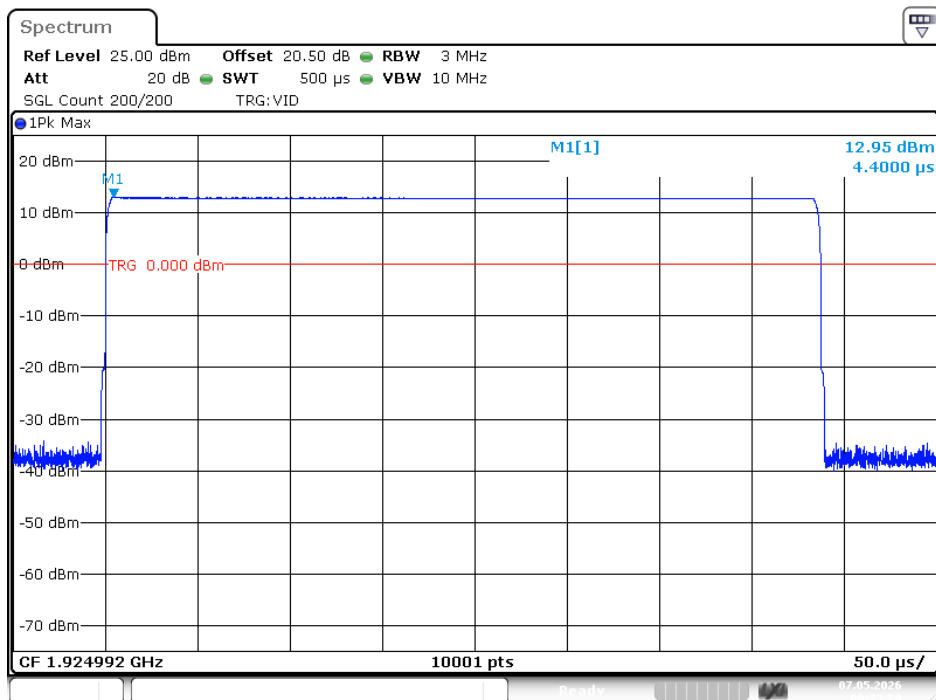
Conducted Peak Output Power antenna 1



Lower Channel



Upper Channel



Middle Channel

10 Test equipment and ancillaries used for tests

To simplify the identification of the test equipment and/or ancillaries which were used, the reporting of the relevant test cases only refer to the test item number as specified in the table below.

No.	Equipment	Manufacturer	Type	Serial No.	Inv. No.	Kind of Calib.	Last Calib.	Next Calib.
Conducted								
L-1	Spectrum Analyzer	R&S	FSV30	100763	300003950	k	12/2025	12/2026
L-2	Signal Generator	R&S	SMBV100A	257858	300004529	vlkl!	12/2023	12/2026
L-3	Signaling Unit	R&S	CMD 65	825486	300003611	vlkl!	12/2025	12/2027
L-4	Power Sensor	R&S	NRP-Z22	100031	400000188	vlkl!	12/2025	12/2027

No.	Equipment	Manufacturer	Type	Serial No.	Inv. No.	Kind of Calib.	Last Calib.	Next Calib.
Power Line Conducted Emission								
G-1	EMI Receiver	R&S	ESR3	102981	3000006318	k	12/2025	12/2026
G-2	VISN	R&S	ESH 3-Z5	893045/004	300000584	k	12/2025	12/2026

No.	Equipment	Manufacturer	Type	Serial No.	Inv. No.	Kind of Calib.	Last Calib.	Next Calib.
Radiated Emission								
F-1	EMI Receiver	R&S	ESR3	102587	300005771	k	12/2025	12/2026
F-2	Spectrum Analyzer	R&S	FSU26	200809	300003874	k	12/2025	12/2026
F-3	Trilog Antenna	Schwarzbeck	VULB9163	371	300003854	vlkl!	07/2024	07/2026
F-4	Horn antenna	EMCO	3115	9107-3697	300001605	vlkl!	03/2025	03/2027

Agenda: Kind of Calibration

k calibration / calibrated
 ne not required (k, ev, izw, zw not required)
 ev periodic self verification
 Ve long-term stability recognized
 vlkl! Attention: extended calibration interval
 NK! Attention: not calibrated

EK limited calibration
 zw cyclical maintenance (external cyclical maintenance)
 izw internal cyclical maintenance
 g blocked for accredited testing

*) next calibration ordered / currently in progress

11 Observations

No observations exceeding those reported with the single test cases have been made.

Annex A: Photographs of the Test Set-up

See additional PDF document Annex A-C.

Annex B: External Photographs of the EUT

See additional PDF document Annex A-C.

Annex C: Internal Photographs of the EUT

See additional PDF document Annex A-C.

Annex D: Document History

Version	Applied Changes	Date of Release
R01	Initial release	2026-09-04
R02	Change of Product name, HVIN and PMN	2026-06-16
R03	Changes in Chapter 9.1	2026-09-04

Annex E: Further Information

Glossary

DUT	-	Device under Test
EMC	-	Electromagnetic Compatibility
EUT	-	Equipment under Test
FCC	-	Federal Communication Commission
FCC ID	-	Company Identifier at FCC
HW	-	Hardware
IC	-	Industry Canada
Inv. No.	-	Inventory number
N/A	-	not applicable
S/N	-	Serial Number
SW	-	Software