

Test report

Number T251-1047/25

Project file: C20250848

Date: 2026-01-30

Pages: 17

Product: Avalanche beacon

Type reference: FOCUS PRO, FOCUS VOICE

Ratings: 3.7 V d.c.
Class: III

Trademark:



Applicant: Ortovox Sportartikel
Rotwandweg 3a, 82024 Taufkirchen, Germany

Manufacturer: Ortovox Sportartikel
Rotwandweg 3a, 82024 Taufkirchen, Germany

Place of manufacture: BMK Czech Technologies s.r.o.
Eduarda Proppera 694, 417 42 Krupka 1, Czech Republic

Summary of testing

Testing method: ANSI C63.10:2013 (Clause 6.3, 6.4, 6.5, 6.8)

Testing location: SIQ Ljubljana
Mašera-Spasičeva ulica 10, SI-1000 Ljubljana, Slovenia

Remarks: Date of receipt of test items: 2025-10-23
Number of items tested: 1
Date of performance of tests: 2025-11-12 – 2025-12-03
The test results presented in this report relate only to the items tested.
The test items were tested in the condition as received.
The product complies with the requirements of the testing methods.

Tested by: Luka Cvajnar

Approved by: Marjan Mak

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1 GENERAL

History sheet			
Date	Report No.	Change	Revision
2026-01-30	T251-1047/25	Initial Test Report issued.	--

Environmental conditions:

Ambient temperature: 15 °C to 35 °C

Relative humidity: 30 % to 60 %

Atmospheric pressure: 860 mbar to 1060 mbar

1.1 Equipment under test

Avalanche Transceiver

Type: **FOCUS PRO, FOCUS VOICE**

1.2 General product information

The EUT is an avalanche beacon. The device has two main modes search and send. In send mode, it continuously transmits a signal so others can find and rescue the wearer of the device. In search mode, it receives signals from other beacons to help rescuers locate avalanche victims quickly. The beacon has an integrated voice navigation for easier guidance.

Bluetooth Low Energy for Firmware updates that are done by the user and for settings that can be changed on the device by the user. It can be also used for update speech files on the device. Additionally, there might be a training mode, where beacon can be configured as a sender in a training scenario.

Model Differences:

-FOCUS VOICE

-FOCUS PRO

Both models are electrically and mechanically identical, the only difference is that the FOCUS PRO device has two additional function buttons on the front side of enclosure and additional software functions. For detail description between the models and additional clarifications regarding additional functions see User manual in Enclosure No.4.

FCC ID: **KF5-FOCUS**

IC: **26906-FOCUS**

Equipment Description

Hardware version :	p13r3
Firmware version :	af1f1ab
SIQ tested number :	S20257929
Dimensions of EUT (mm):	120 x 70 x 23 mm
Operating frequency:	457 kHz
One/two/three phase EUT:	Battery powered
Floor standing / table-top equipment or a combination:	Portable
Antenna type	Internal – Wire-wound ferrite

EUT Internal Frequencies

Frequency (MHz)	Description
457 kHz	Transciever
2.4835 GHz	Bluetooth 5.0 module

Copy of marking plate

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



2 TEST EQUIPMENT

Equipment used					
<i>Radiated measurements</i>					
EMI test receiver	ESW 44		R&S	2024-09-26	2026-03-26
Semi-anechoic chamber	SAC 3m	109071	Comtest engineering	2025-03-27	2028-03-27
Ultra-Broadband Antenna	HL562E	/	Rohde & Schwarz	2023-09-26	2026-09-26
Horn Antenna	HF907	102508	Rohde & Schwarz	2023-08-22	2026-08-22
Active loop antenna	FMZB 1519		Schwarzbeck	2024-09-18	2026-03-18
Turn table (2 m diameter)	TT 2.0 SI	/	Maturo	N/A	
Bore-sight antenna mast	BAM-4.0-P	/	Maturo	N/A	
Multi-channel positioning equipment	Maturo NCD	/	Maturo	N/A	

2.1 Conversion factors and all other formulas

Unit	Conversion unit	Formula of conversion
$\text{dB}_{\mu\text{V}}$	$\text{dB}_{\mu\text{V/m}}$	$\text{dB}_{\mu\text{V/m}} = \text{dB}_{\mu\text{V}} + \text{AF}$
$\mu\text{V/m}$	$\text{dB}_{\mu\text{V/m}}$	$\text{dB}_{\mu\text{V/m}} = 20\log(X(\mu\text{V/m})/1\mu\text{V})$

	Test distance stated in standard	Test distance of measurement	Conversion factor
Class B	3 m	3 m	/
Class A	10 m	3 m	20dB/decade

3 Measurement uncertainty

The following measurement uncertainty levels have been estimated for tests performed on the product, as specified in ETSI TR 100 028-2 and C63.23. This represents an expanded uncertainty expressed at 95% confidence level using a coverage factor $k=2$.

Measurements	U_{LAB}	$U_{ETSI\ TR\ 100\ 028-2}$	$U_{C63.23}$
AC Line Conducted Emission	3.2 dB	/	$\pm 4,13$
Spurious emission 30 – 300 MHz	4.2 dB	± 6	/
Spurious emission 300 – 1000 MHz	4.4 dB	± 6	/
Occupied bandwidth (99% emission bandwidth)	< 2%	$\pm 5\%$	/

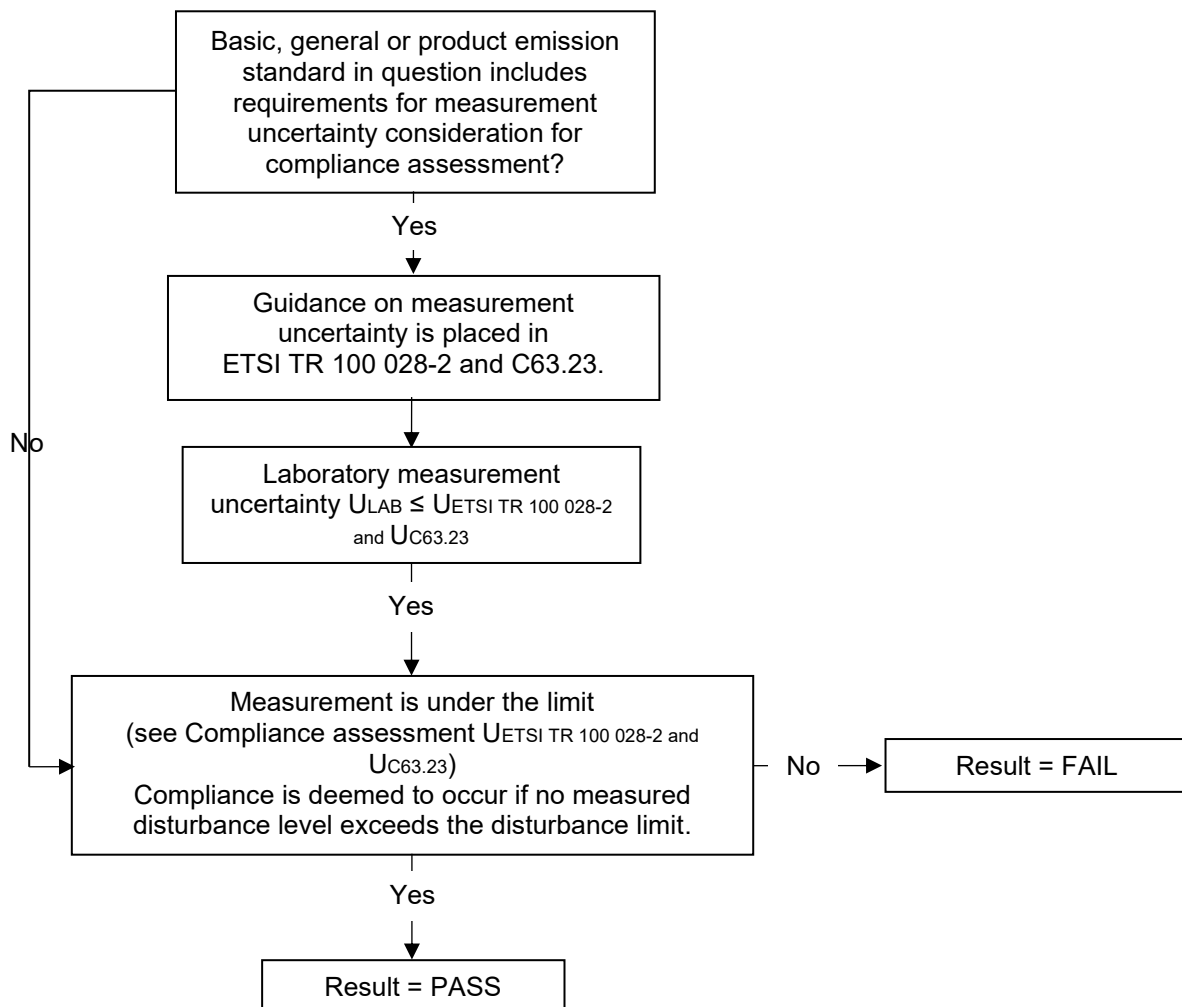
Note: Measurement uncertainty calculated in accordance with ETSI TR 100 028-2 and C63.23.

3.1 Application of decision rule

Application of decision rule and statement of conformity is defined in document TN023 Decision rule and measurement uncertainty.

As a general rule Pass/Fail decisions are based on simple acceptance rule and acceptance limits chosen based on simple acceptance ($w = 0$, $AL = TL$) except if a decision rule is governed by particular standard or guidance document.

Decision rule:



4 TEST SUMMARY

STANDARDS (details on first page)	Tested		Sample	
	yes	no	pass	not pass
ANSI C63.10-2020 (Clause 6.3, 6.4, 6.5, 6.8); The product also complies with: 47 CFR Part 15, Subpart C (§15.203, §15.207 (a), §15.205; 15.209) RSS-210 Issue 10 (Clause 4.3), RSS-Gen, Issue 5 (Clause 6.7, 8.8, 8.9)	☒	☐	☒	☐

Test	Section within the report	47 CFR Part 15	RSS 210, Issue 10 (*1) or RSS-Gen, Issue 5 (*2)	Conclusion
Antenna requirement	7.1	15.203	-	PASS
99% Bandwidth	7.2	-	6.7 (*2)	PASS
Conducted emission	7.3	15.207	8.8 (*2)	PASS
Radiated emission	7.4	15.205, 15.209	8.9 (*2), 7.2 (*1)	PASS
*Note: Radiated measurements performed in laboratory recognized by ISED Canada: – CAB identifier: SI0001 – ISED#: 21434				

4.1 Operating voltages/frequencies used for testing

Section	Test	Operating conditions
7.2	99% Bandwidth	Battery operated
7.4	Radiated emission	Battery operated

5 EMISSION TESTS

5.1 Antenna requirements

Requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

Conclusion:

PASS

Note: Device has internal antenna – wire wound ferrite soldered into the PCB. The mounting of antenna is fixed to the radio module, and no other antenna should be used.

5.2 99% Bandwidth

5.2.1 Test procedure

The emission bandwidth ($\times$ dB) is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated $\times$ dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least $3\times$ the resolution bandwidth.

When the occupied bandwidth limit is not stated in the applicable RSS or reference measurement method, the transmitted signal bandwidth shall be reported as the 99% emission bandwidth, as calculated or measured.

- The transmitter shall be operated at its maximum carrier power measured under normal test conditions.
- The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts.
- The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the occupied bandwidth (OBW) and video bandwidth (VBW) shall be approximately $3\times$ RBW.

Note: Video averaging is not permitted.

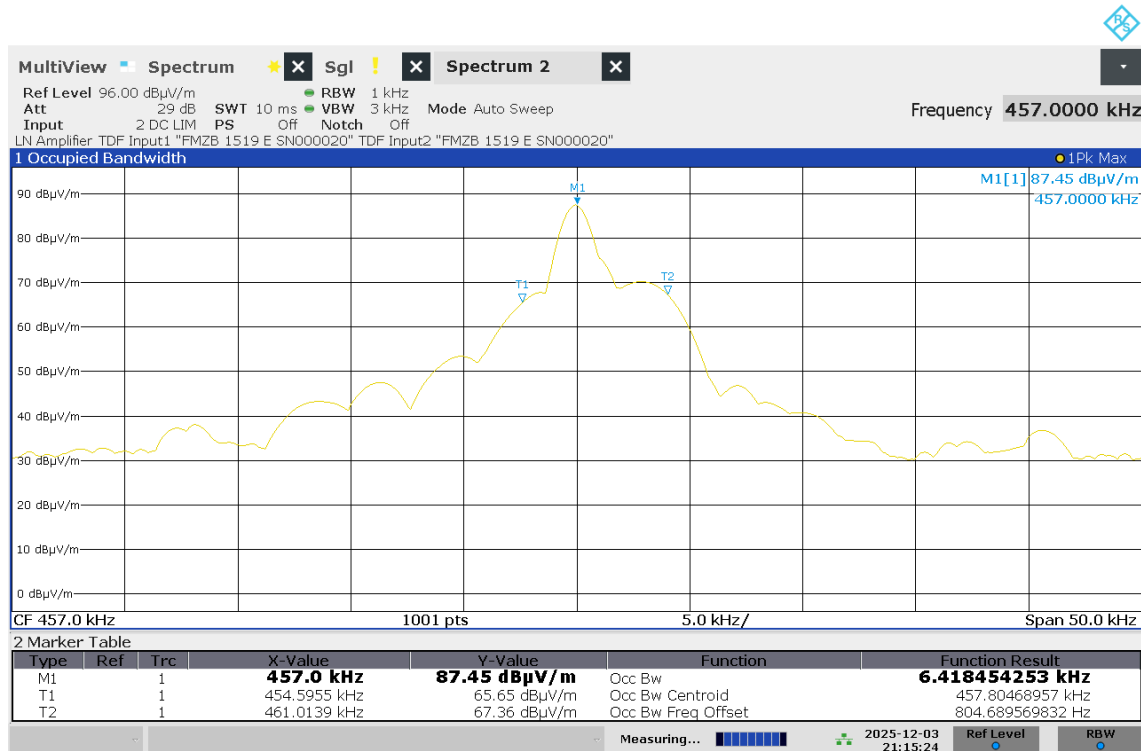
A peak, or peak hold, may be used in place of the sampling detector as this may produce a wider bandwidth than the actual bandwidth (worst-case measurement). Use of a peak hold may be necessary to determine the occupied bandwidth if the device is not transmitting continuously.

The trace data points are recovered and are directly summed in linear power level terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached and that frequency recorded. The process is repeated for the highest frequency data points (starting at the highest frequency, at the right side of the span, and going down in frequency). This frequency is then recorded.

The difference between the two recorded frequencies is the 99% occupied bandwidth.

5.2.2 Test results

Antenna Coaxial



09:15:24 PM 12/03/2025

Antenna Coplanar



09:20:36 PM 12/03/2025

Frequency (MHz)	99 % bandwidth (kHz)	PASS/FAIL
0.457	7.54	PASS

5.347 CFR Part 15.207 – AC Line Conducted Emission

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15–0.5	66 to 56*	56 to 46
0.5-5	56	46
5-30	60	50

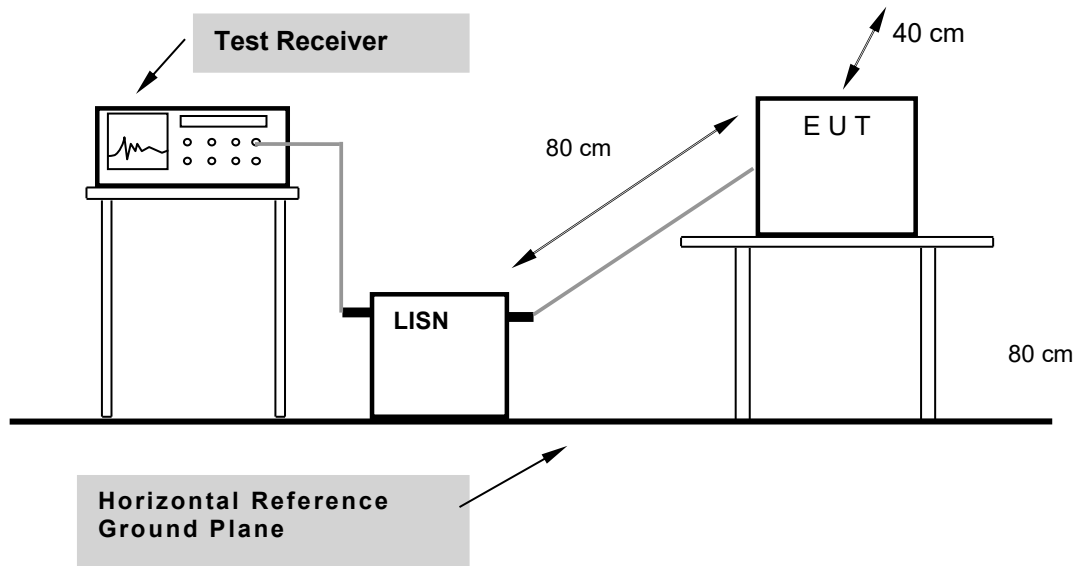
*Decreases with the logarithm of the frequency.

5.3.1 Test procedure

EMI test receiver was set to investigate from 150 kHz to 30 MHz with the 9 kHz RBW.

During conducted emission EUT was connected to a LISN and maximum emissions was recorded in the QP and average detection mode.

5.3.2 Test setup



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

5.3.3 Test results

EUT Information

EUT:

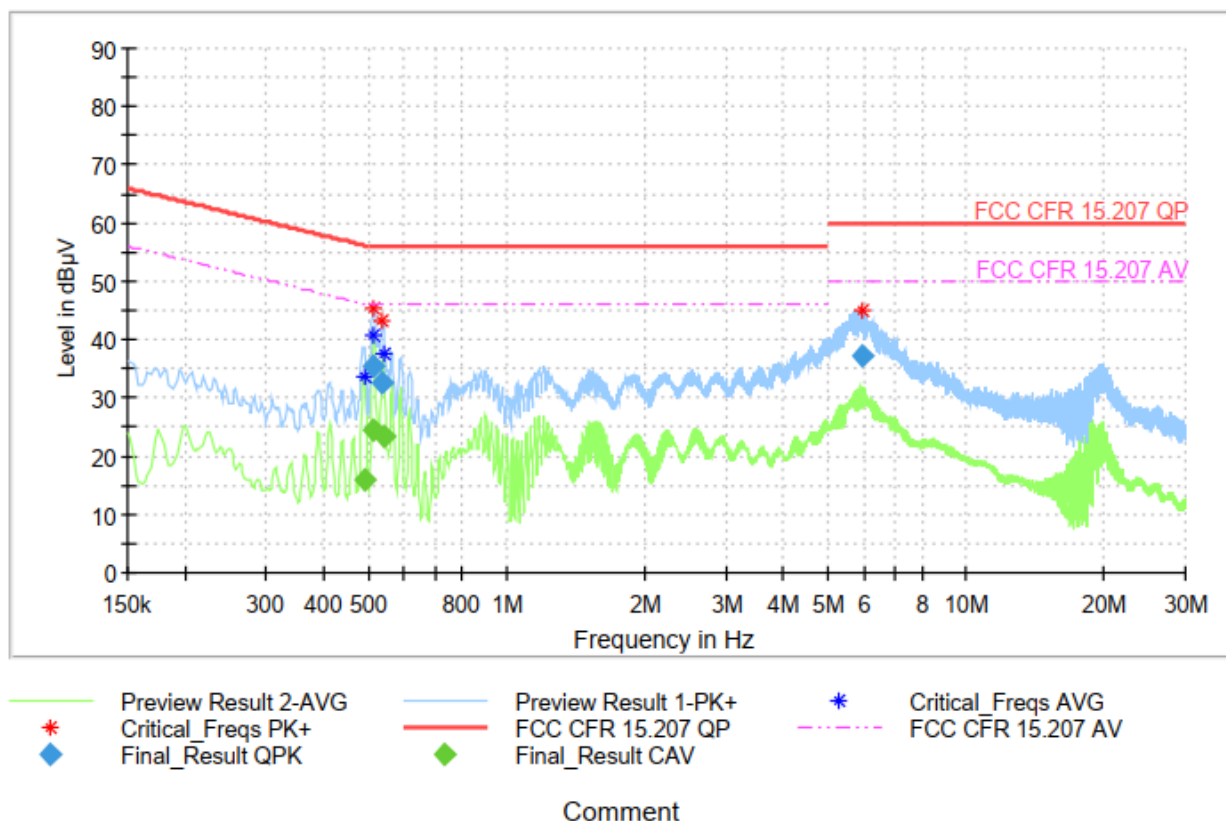
ORTOVOX FOCUS PRO

Operating Mode:

Uin: 120 V; 60 Hz; Charging

Lines:

L + N



Final Result

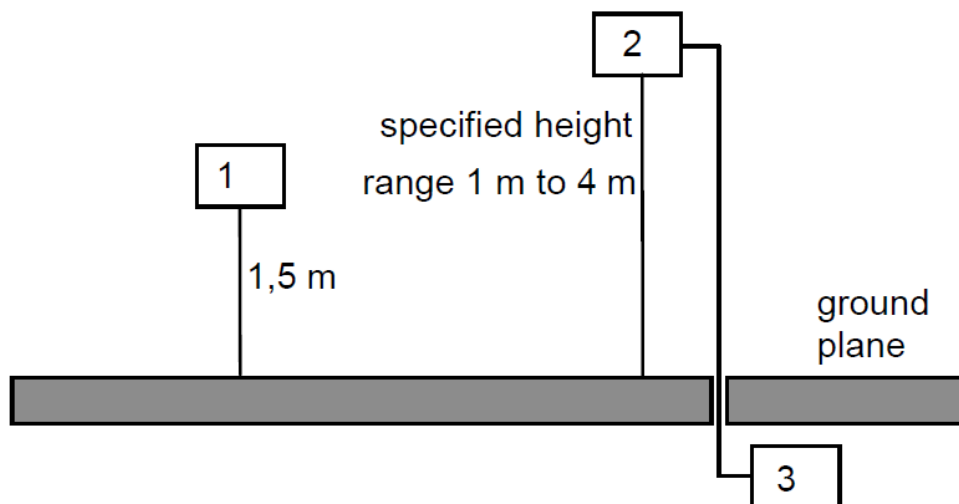
Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.489750	---	15.92	46.17	30.25	1000.0	9.000	L1	ON	9.9
0.514500	---	24.58	46.00	21.42	1000.0	9.000	L1	ON	9.9
0.514500	35.45	---	56.00	20.55	1000.0	9.000	L1	ON	9.9
0.537000	32.52	---	56.00	23.48	1000.0	9.000	L1	ON	9.9
0.539250	---	23.37	46.00	22.63	1000.0	9.000	L1	ON	9.9
5.952750	37.10	---	60.00	22.90	1000.0	9.000	N	ON	9.7

5.4 47 CFR Part 15.209 - Radiated emission measurement (intentional radiator)

5.4.1 Test procedure

1. The EUT was placed on the top of a rotating table 0.8 meters above the ground in an Anechoic Chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 m away from the interference-receiving antenna, which was mounted on the top of variable-height antenna tower.
3. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the turn table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to PEAK and QUASI-PEAK Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. The highest points would be re-tested one by one using the quasi-peak method.
- 7.

5.4.2 Test setup



- 1) UUT
- 2) Measurement antenna
- 3) Measurement equipment

5.4.3 Test results

EUT Information

EUT:

ORTOVOX FOCUS PRO

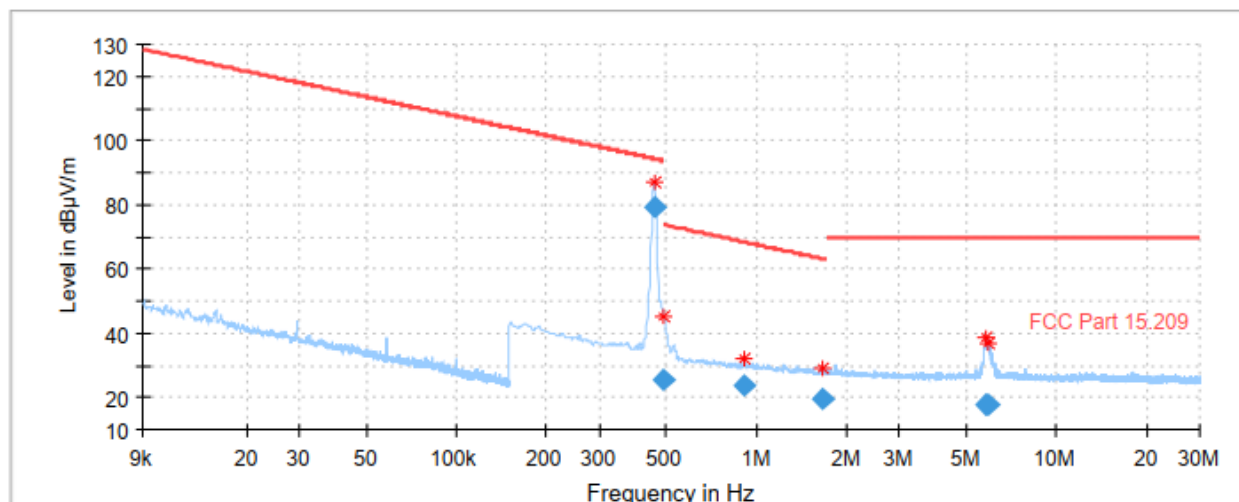
Operating mode:

Send mode

Antenna polarization:

Coaxial

Full Spectrum



— Preview Result 1-PK+
 * Critical_Freqs PK+
 ◆ Final_Result QPK

FCC Part 15.209

Comment

Final Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)
0.456000	79.46	94.42	14.96	1000.0	9.000	H	108.0
0.492000	25.42	73.77	48.35	1000.0	9.000	H	108.0
0.915000	23.54	68.39	44.86	1000.0	9.000	H	343.0
1.673250	19.52	63.16	43.64	1000.0	9.000	H	13.0
5.808750	18.01	69.50	51.49	1000.0	9.000	H	259.0
5.928000	17.82	69.50	51.68	1000.0	9.000	H	259.0

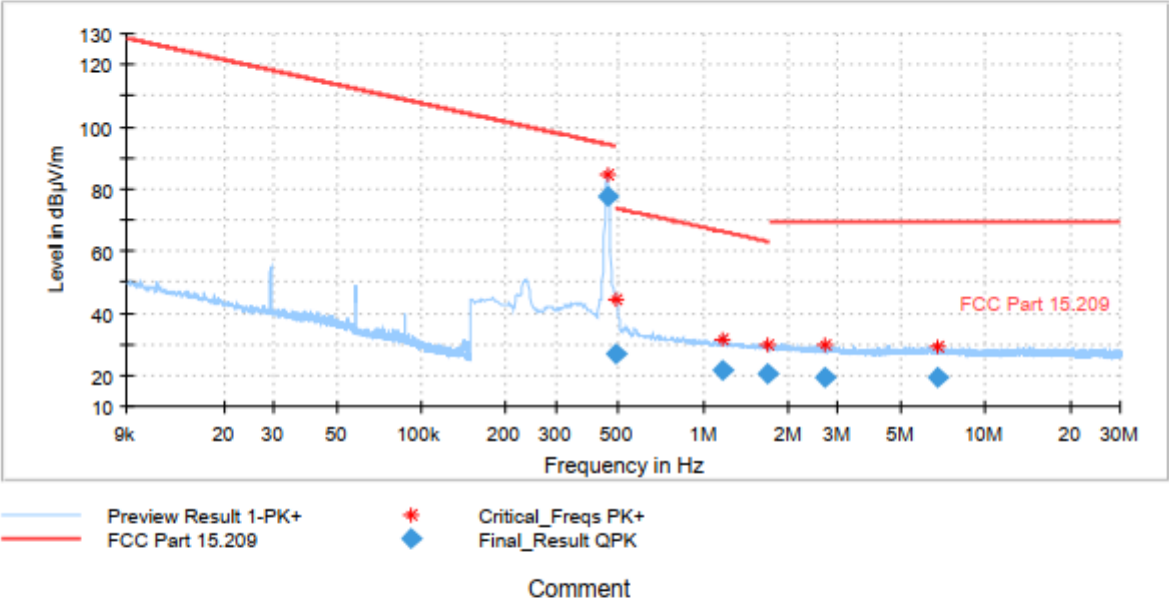


EUT Information

EUT:
Operating mode:

ORTOVOX FOCUS PRO
Send mode

Full Spectrum



Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)
0.456000	77.62	94.42	16.80	1000.0	9.000	H	358.0
0.492000	27.08	73.77	46.69	1000.0	9.000	H	0.0
1.167000	21.81	66.28	44.48	1000.0	9.000	H	0.0
1.680000	20.69	63.13	42.44	1000.0	9.000	H	0.0
2.692500	19.28	69.50	50.22	1000.0	9.000	H	17.0
6.776250	19.38	69.50	50.12	1000.0	9.000	H	318.0

EUT Information

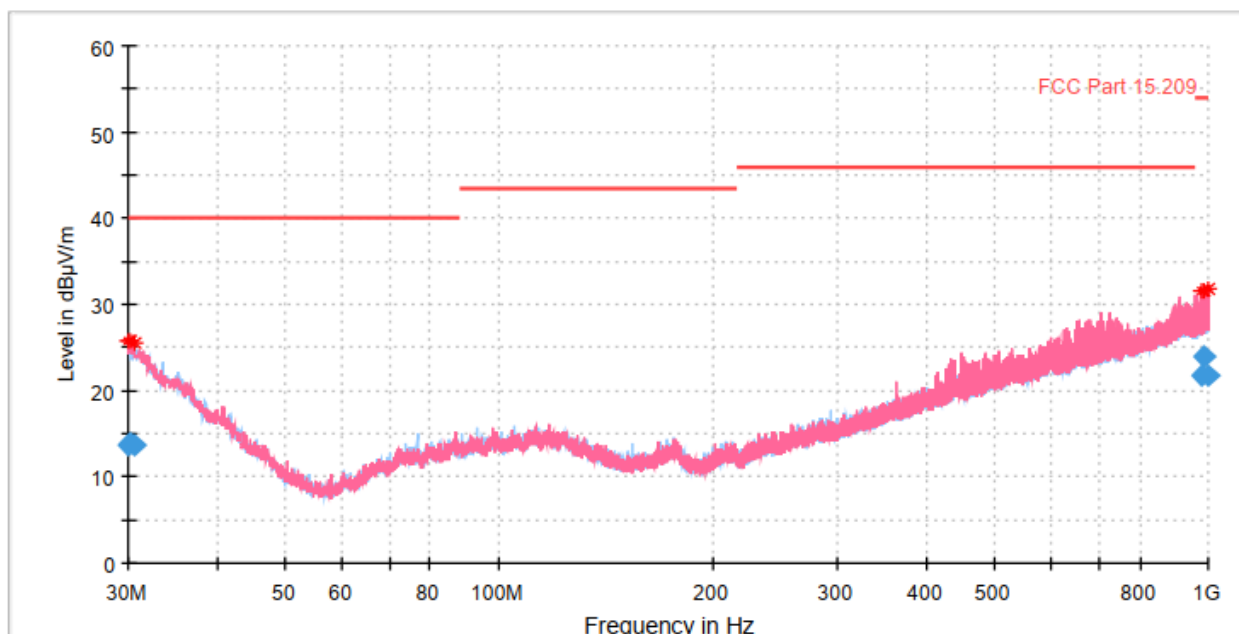
EUT:

ORTOVOX FOCUS PRO

Operating mode:

Send mode

Full Spectrum



Final Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth h (deg)	Corr. (dB/m)
30.030000	13.76	40.00	26.24	1000.0	120.000	100.0	H	115.0	19.8
30.180000	13.89	40.00	26.11	1000.0	120.000	100.0	H	88.0	19.8
30.660000	13.71	40.00	26.29	1000.0	120.000	100.0	V	0.0	19.5
981.630000	21.75	54.00	32.25	1000.0	120.000	100.0	V	11.0	23.6
986.670000	23.90	54.00	30.10	1000.0	120.000	100.0	V	235.0	23.7
999.450000	21.67	54.00	32.33	1000.0	120.000	100.0	V	321.0	23.8

-----END OF TEST REPORT-----