FCC SAR ASSESSMENT REPORT

Test report #:	28112025_004	Date of report:	2nd of December 2025
Test laboratory:	Etteplan Finland Oy	Client:	VILPE Oy
Address:	Aholaidantie 3 FI-40320 Jyväskylä Finland		Kauppatie 9 65610 Mustasaari Finland
Contact:	Anssi Kauhanen		Kimmo Kujala
E-mail:	lab.eiot@etteplan.com		kimmo.kujala@vilpe.com
Telephone:	+358 10 3070		+358 20 1233263

Evaluation has been carried out in accordance with:	ANSI/IEEE C95.1-1992	ANSI/IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz
	OET Bulletin No. 65	Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields
	KDB 447498 D04	Interim General RF Exposure Guidance v01
	KDB 447498 D01	General RF Exposure Guidance v06

Device description:	The RHT-2 (NA) is a wireless humidity sensor designed to monitor the humidity in a building insulation, mainly on the roof insulation. It communicates with the CCU gateway via its 918.9 MHz LoRa radio. It has a non-replaceable battery designed to last for 15 years.
Statement of Compliance:	Compliant
EUT tested by:	Henry Sand
Reported by:	Henry Sand

Date and signatures:

DN: cn=Kauhanen Anssi, o=Etteplan Finland Oy, email=anssi.kauhanen@etteplan.com, c=FI Date: 2025.12.02 14:59:33 +02'00'	DN: cn=Henry Sand, o=Etteplan Finland Oy, email=EXT-Henry.Sand@etteplan.com, c=FI Date: 2025.12.02 14:12:15 +02'00'
Anssi Kauhanen	Henry Sand
Manager, EMC & RF Laboratory Operations	Senior RF/EMC Designer

EQUIPMENT UNDER TEST (EUT)

EUT type:	RHT-2 (NA)
EUT ID:	RHT-2 (NA)
HW version:	V2.0a
SW version:	V2.0-2.2
FCC ID:	2BOAS-T20108
Product description:	Wireless humidity sensor
Device category: (Portable/Mobile/Fixed)	Fixed
Environment:	General population/Uncontrolled
Additional information:	-

ADDITIONAL NOTES

The test results and statements apply only to the tested item(s) as received. EUT information is provided by manufacturer. Etteplan is not responsible for any further propositions of applicability on the basis of the test results in this report. This test report shall only be reproduced in full. No partial reproduction of the report is allowed without written approval of the test laboratory. This report is valid when digitally signed and protected by a strong password.

TABLE OF CONTENTS

1 General description

1.1 EUT Description

The following EUT models were tested:

Table 1 – Product details

Brand	Model	Description
VILPE	RHT-2 (NA)	It communicates with the CCU gateway via its 918.9 MHz LoRa radio.

1.2 Specification of the EUT

Table 2 – Antenna details

Antenna	Antenna brand/model	Antenna type	Info
Internal	Custom antenna	PCB	915 MHz LoRaWAN

Details declared by the manufacturer.

Table 3 – Lora details

Operating band	Frequency	Max. Time Slots/Duty Cycle	Max. conducted TX power		Tune-Up	Antenna Max. Gain	Min. cable loss	EIRP	
	[MHz]		[dBm]	[mW]	[dB]	[dBi]	[dB]	[dBm]	[mW]
LoRa 915 MHz	902-928	10 %	4.9		1	0.6		6.5	4.4
Notes!		• Only worst-case values reported • Details declared by the manufacturer.							

2 SAR Assessment

2.1 SAR Test Exclusion Limits

2.1.1 Equation

[(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR, and ≤ 7.5 for 10-g extremity SAR

2.1.2 100 MHz – 6 GHz and ≤ 50 mm

MHz	5	10	15	20	25	mm
150	39	77	116	155	194	*SAR Test Exclusion Threshold (mW)*
300	27	55	82	110	137	
450	22	45	67	89	112	
835	16	33	49	66	82	
900	16	32	47	63	79	
1500	12	24	37	49	61	
1900	11	22	33	44	54	
2450	10	19	29	38	48	
3600	8	16	24	32	40	
5200	7	13	20	26	33	
5400	6	13	19	26	32	
5800	6	12	19	25	31	

MHz	30	35	40	45	50	mm
150	232	271	310	349	387	*SAR Test Exclusion Threshold (mW)*
300	164	192	219	246	274	
450	134	157	179	201	224	
835	98	115	131	148	164	
900	95	111	126	142	158	
1500	73	86	98	110	122	
1900	65	76	87	98	109	
2450	57	67	77	86	96	
3600	47	55	63	71	79	
5200	39	46	53	59	66	
5400	39	45	52	58	65	
5800	37	44	50	56	62	

2.1.3 100 MHz – 6 GHz and > 50 mm

MHz	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	mm
100	474	481	487	494	501	507	514	521	527	534	541	547	554	561	567	
150	387	397	407	417	427	437	447	457	467	477	487	497	507	517	527	
300	274	294	314	334	354	374	394	414	434	454	474	494	514	534	554	
450	274	254	284	314	344	374	404	434	464	494	524	554	584	614	644	
835	164	220	275	331	387	442	498	554	609	665	721	776	832	888	943	
900	158	218	278	338	398	458	518	578	638	698	758	818	878	938	998	
1500	122	222	322	422	522	622	722	822	922	1022	1122	1222	1322	1422	1522	*mW*
1900	109	209	309	409	509	609	709	809	909	1009	1109	1209	1309	1409	1509	
2450	96	196	296	396	496	596	696	796	896	996	1096	1196	1296	1396	1496	
3600	79	179	279	379	479	579	679	779	879	979	1079	1179	1279	1379	1479	
5200	66	166	266	366	466	566	666	766	866	966	1066	1166	1266	1366	1466	
5400	65	165	265	365	465	565	665	765	865	965	1065	1615	1265	1365	1465	
5800	62	162	262	362	462	562	662	762	862	962	1062	1162	1262	1362	1462	

2.1.4 < 100 MHz and < 200 mm

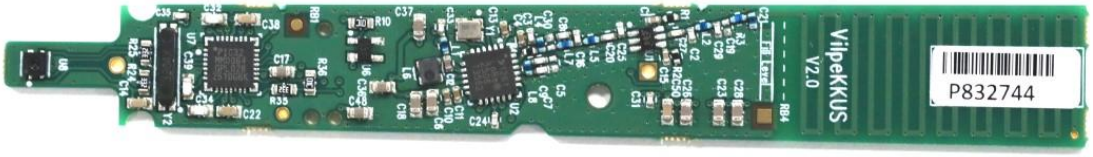
MHz	<50	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	mm
100	237	474	481	487	494	501	507	514	521	527	534	541	547	554	561	567	
50	308	617	625	634	643	651	660	669	677	686	695	703	712	721	729	738	
10	474	948	961	975	988	1001	1015	1028	1041	1055	1068	1081	1095	1108	1121	1135	
1	711	1422	1442	1462	1482	1502	1522	1542	1562	1582	1602	1622	1642	1662	1682	1702	*mW*
0.1	948	1896	1923	1949	1976	2003	2029	2056	2083	2109	2136	2163	2189	2216	2243	2269	
0.05	1019	2039	2067	2096	2125	2153	2182	2211	2239	2268	2297	2325	2354	2383	2411	2440	
0.01	1185	2370	2403	2437	2470	2503	2537	2570	2603	2637	2670	2703	2737	2770	2803	2837	

2.2 Assessment Result

System	Operating band	Frequency	Distance from antenna to surface	Selected distance	Selected frequency	Result, EIRP	SAR Test Exclusion Treshold High Limit @Distance@Frequency	Verdict
		[MHz]	[mm]	[mm]	MHz	[mW]	[mW]	
LoRaWAN	915 MHz ISM	902-928	8	5	928	4.4	15	PASS
Notes!	Only worst case reported							

The SAR requirement is deemed to be satisfied without test.

3 Antennas



Lora-antenna

Image 1 – Antennas

-- End of Etteplan Test Laboratory RF Exposure Report --