DEKRA Testing and Certification, S.A.U.
Parque Tecnológico de Andalucía,
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C.I.F. A29 507 456

Test report No:
76695REM.002

Test report

FCC Rules and Regulations CFR 47, Part 15, Subpart B (10-1-21 Edition) & ICES-003 Issue 7 (October 2020)

(*) Identification of item tested	AIRZONE THINK MONOCHROME THERMOSTAT WIRELESS
(*) Trademark	AIRZONE
(*) Model and /or type reference	AZS62THINKRB
(*) Derived model not tested	AZS62THINKRN
Other identification of the product	FCC ID: SVS-006-TU5 IC: 24685-006TU5
(*) Features	HW version: V2.0 SW version: 3.6.1 Features supported: See data sheet
Manufacturer	CORPORACIÓN EMPRESARIAL ALTRA S.L. C/ MARIE CURIE 21, MÁLAGA (29590), SPAIN
Test method requested, standard	FCC Rules and Regulations CFR 47, Part 15, Subpart B (10-1-21 Edition) & ICES-003 Issue 7 (October 2020)
Summary	IN COMPLIANCE
Approved by (name / position & signature)	Antonio José Jurado Industrial & Automotive EMC Lab. Manager 80157242B ANTONIO JOSE JURADO (C:A29507456)
Date of issue	2023-10-18
Report template No	FDT08_24 (*) “Data provided by the client”

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Acronyms

Acronym ID	Acronym Description
Code	EMC Test Code
Freq Rng	Frequency Range
MP	Measurement Point
OM	Operation Mode
S/	Sample
V	Verdict

Competences and guarantees

DEKRA Testing and Certification S.A.U. is a testing laboratory accredited by the National Accreditation Body (ENAC -Entidad Nacional de Acreditación), to perform the tests indicated in the Certificate No. 51/LE 147.

In order to assure the traceability to other national and international laboratories, DEKRA Testing and Certification S.A.U. has a calibration and maintenance program for its measurement equipment.

DEKRA Testing and Certification S.A.U. guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated on the report and, it is based on the knowledge and technical facilities available at DEKRA Testing and Certification S.A.U. at the time of performance of the test.

DEKRA Testing and Certification S.A.U. is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

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General conditions

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or competent Authorities.
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4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA Testing and Certification S.A.U. and the Accreditation Bodies.

Uncertainty

Uncertainty (factor k=2) was calculated according to the DEKRA Testing and Certification S.A.U. internal document PODT000.

The total uncertainty of the measurement system for the measured radio disturbance characteristics of EUT from 30 MHz to 1000 MHz is I = ± 4,9 dB for quasi-peak measurements, I = ± 4,6 dB for peak measurements (k= 2).

The total uncertainty of the measurement system for the measured radio disturbance characteristics of EUT from 1000 MHz to 12.75 GHz is I = ± 2,6 dB for peak and average measurements (k = 2).

Data provided by the client

The following data has been provided by the client:

1. Information relating to the description of the sample ("Identification of the item tested", "Trademark", "Model and/or type reference tested").

2. Derived model not tested: AZCE6THINKRN. These model have been declared by the supplier of the sample as being the same as the model under test.

3. The sample consists of an AIRZONE think monochrome thermostat wireless model: AZCE6THINKRB. Graphic interface with low-energy e-ink screen and capacitive buttons to control zones in Airzone systems. Wireless communications. Powered by battery button CR2450.

DEKRA Testing and Certification S.A.U. declines any responsibility with respect to the information provided by the client and that may affect the validity of results.

Usage of samples

Samples undergoing test have been selected by: The client.

Id	Control Number	Description	Model	Serial Nº	Date of Reception	Application
S/01	76695B_3.1	Thermostat	AZS62THINKRB	F01K7AY	2023-09-01	Element Under Test
S/01	76695B_1.1	Auxiliary	AZPV6IBPR06ANT	000C1GXL	2023-09-01	Auxiliary Element

Notes referenced to samples during the project:

N/A

Test sample description

Ports…… :	Port name and description	Cable			
		Specified max length [m]	Attached during test	Shielded	Coupled to patient(3)
	Not provided data	.....	[ ]	[ ]	[ ]
Supplementary information to the ports…… :	No ports available				
Rated power supply .....:	Voltage and Frequency	Reference poles			
		L1	L2	L3	N	PE
	[X] DC: 3.3 Vdc				
Rated Power .....:	0.02 mW				
Clock frequencies.....:	Not provided data				
Other parameters .....:	Not provided data				
Software version .....:	3.6.1				
Hardware version .....:	V2.0				
Dimensions in cm (W x H x D) ....:	92 x 92 x 15.85 mm				
Mounting position .....:	[ ] Table top equipment				
	[X] Wall/Ceiling mounted equipment				
	[ ] Floor standing equipment				
	[ ] Hand-held equipment				
	[ ] Other:				
Modules/parts.....:	Module/parts of test item	Type	Manufacturer		
	Thermostat Think Radio	AZS62THINKR	AIRZONE		
Accessories (not part of the test item) .....:	Description	Type	Manufacturer		
	MAIN CONTROL BOARD (FLEXA)	AZPV6IBPRO6	AIRZONE		
Documents as provided by the applicant.....:	Description	File name	Issue date		
	Data Sheet	FT_AZCE6THI	.....		

(3) Only for Medical Equipment

Identification of the client

CORPORACIÓN EMPRESARIAL ALTRA S.L.
C/ MARIE CURIE 21, MÁLAGA (29590), SPAIN

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2023-09-12
Date (finish)	2023-09-12

Document history

Report number	Date	Description
76695REM.002	2023-10-18	First release

Environmental conditions

In the control chamber, the following limits were not exceeded during the test:

Temperature	Min. = 15 ºC Max. = 35 ºC
Relative humidity	Min. = 30 % Max. = 75 %
Air pressure	Min. = 860mbar Max. = 1060mbar

In the semianechoic chamber, the following limits were not exceeded during the test.

Temperature	Min. = 15 ºC Max. = 35 ºC
Relative humidity	Min. = 30 % Max. = 75 %
Air pressure	Min. = 860mbar Max. = 1060mbar

In the chamber for conducted measurements, the following limits were not exceeded during the test:

Temperature	Min. = 15 ºC Max. = 35 ºC
Relative humidity	Min. = 30 % Max. = 60 %
Air pressure	Min. = 860mbar Max. = 1060mbar

Remarks and comments

The tests have been performed by the technical personnel: Ricardo Josel Turcios Oliva.

Testing verdicts

Fail	F
Inconclusive	I
Not applicable	N/A
Not measured	N/M
Pass	P
Partial Passed	P*

List of equipment used during the test

Control No.	Equipment	Model	Manufacturer	Next Calibration
6666	EMI TEST RECEIVER 2Hz-44GHz	ESW44	ROHDE AND SCHWARZ	2024-03-04
6607	ETHERNET TEMPERATURE AND HUMIDITY LOGGER	HWg-STE	HW GROUP	2024-04-18
5779	ETHERNET TEMPERATURE AND HUMIDITY LOGGER	HWg-STE	HW GROUP	2024-04-18
6815	HYBRID BILOG ANTENNA 30MHz-6GHz	3142E	ETS LINDGREN	2025-03-04
6142	PRE-AMPLIFIER G>38dB 30MHz-6GHz	BLNA 0360-01N	BONN ELEKTRONIK	2024-06-28
7763	HORN ANTENNA 1-18GHz	BBHA 9120D	SCHWARZBECK MESS-ELEKTRONIK	2026-01-16
4729	PRE-AMPLIFIER G>30dB 18-40GHz	BLMA 1840-1M	BONN ELEKTRONIK	2024-03-14
4848	SOFTWARE FOR EMC/RF TESTING	EMC32	ROHDE AND SCHWARZ	--
7553	TEMPERATURE AND HUMIDITY PROBE	HWg-STE	HW GROUP	2024-04-18
8150	SEMIANECHOIC ABSORBER LINED CHAMBER I	FACT 10	ETS LINDGREN	--

Summary

Test Specification	Requirement – Test case	Verdict	Remark
FCC CFR 47, Part 15, Subpart B (10-1-21 Edition) & ICES-003 Issue 7 (October 2020)	RE Radiated emission. Electromagnetic field measure	P	(1)
	CE Continuous conducted emission	N/A	(2)

Supplementary information and remarks:

(1) Range: f>12.75 GHz. Test required only to the 5th harmonics of the maximum internal work frequency in the EUT.

(2) EUT is powered via internal non-rechargeable battery (3.3Vdc)

Appendix A: Test results

Appendix A content

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Description of the operation modes

The operation modes described in this paragraph constitute a functionality of the sample under test for itself.

The operation modes used by the samples to which the present report refers, are shown in the following table:

Id	Description
OM/01	EUT ON. ISM Radio communication active without TX. Power supply: Internal battery (3.3Vdc)

Test standards version applied

The product standards and test standards applied for each test cases are shown in the following table:

Product Test Standard	Test standard	Requirement – Test case
FCC CFR 47, Part 15, Subpart B (10-1-21 Edition) & ICES-003 Issue 7 (October 2020)	ANSI C63.4 (2014)	RE Radiated emission.

Test Cases Details

FCC 47 CFR Part 15B

RE Radiated emission. Electromagnetic field measure

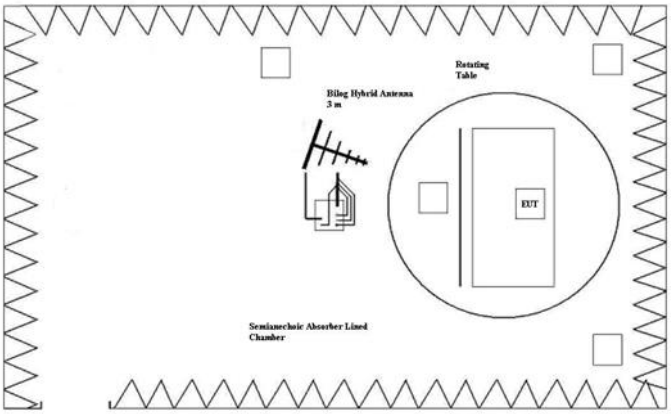
Limits of interference Class B

The applied limit for radiated emissions, 3 m distance, according to the requirements of FCC Rules and Regulations 47 CFR Part 15, Subpart B (10-1-21 Edition), Secs. 15.109 & ICES-003 Issue 7 (October 2020)

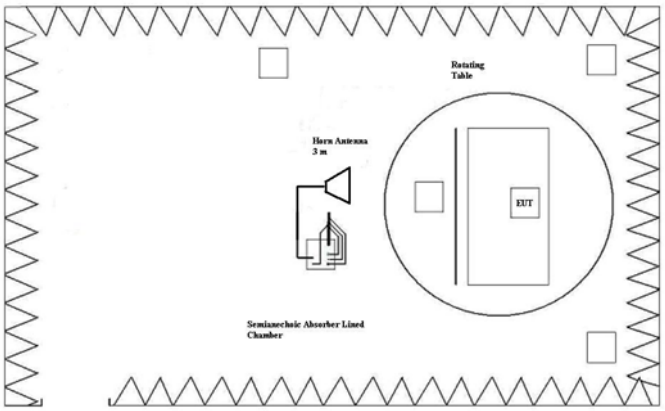
Frequency range (MHz)	FCC Part 15B		ICES-003 Issue 7		FCC Part 15B & ICES-003 Issue 7	
	QP Limit for 3 m		QP Limit for 3 m		PK Limit for 3 m	AVG Limit for 3 m
	(µV/m)	(dBµV/m)	(µV/m)	(dBµV/m)	(dBµV/m)	(dBµV/m)
30 to 88	100	40	100	40	---	---
88 to 216	150	43.5	150	43.5	---	---
216 to 230	200	46	200	46	---	---
230 to 960	200	46	224	47		
960 to 1000	500	54	500	54	---	---
Above 1000	---	---	---	---	74	54

Limits according to FCC Part 15B, are equal or more stringent than those of ICES-003 Issue 7.

Setup for measurements



Setup for measurements < 1GHz.



Setup for measurements > 1GHz.

Results

S/	OM	Code	Freq Rng (MHz)	V
01	OM/01	RE0101_LR	[30, 1000]	P
01	OM/01	RE0101HR	[1000, 12750]	P

Verdict

Pass

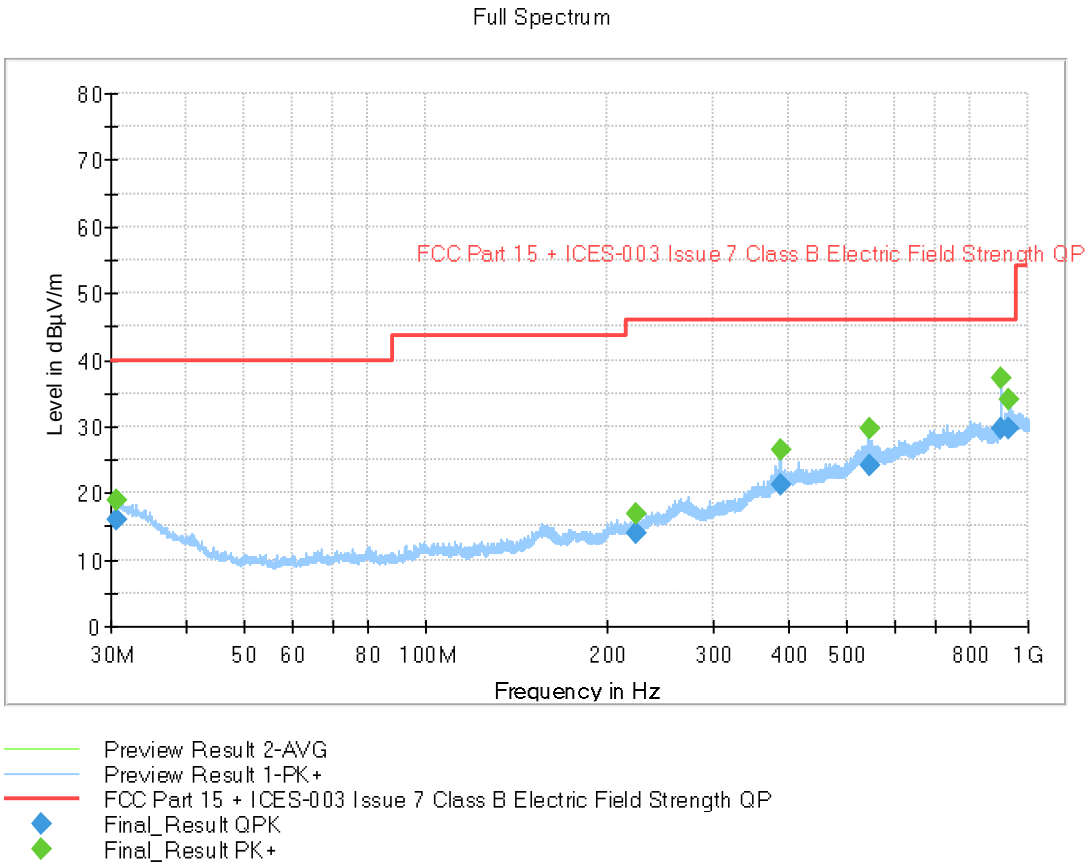
Attachments

EMC Test Code = RE0101_LR Frequency Range MHz = [30, 1000]

Sample ID: S/01

Operation Mode: OM/01. EUT ON. ISM Radio communication active without TX. Power supply: Internal battery (3.3Vdc)

Images:



Tables:

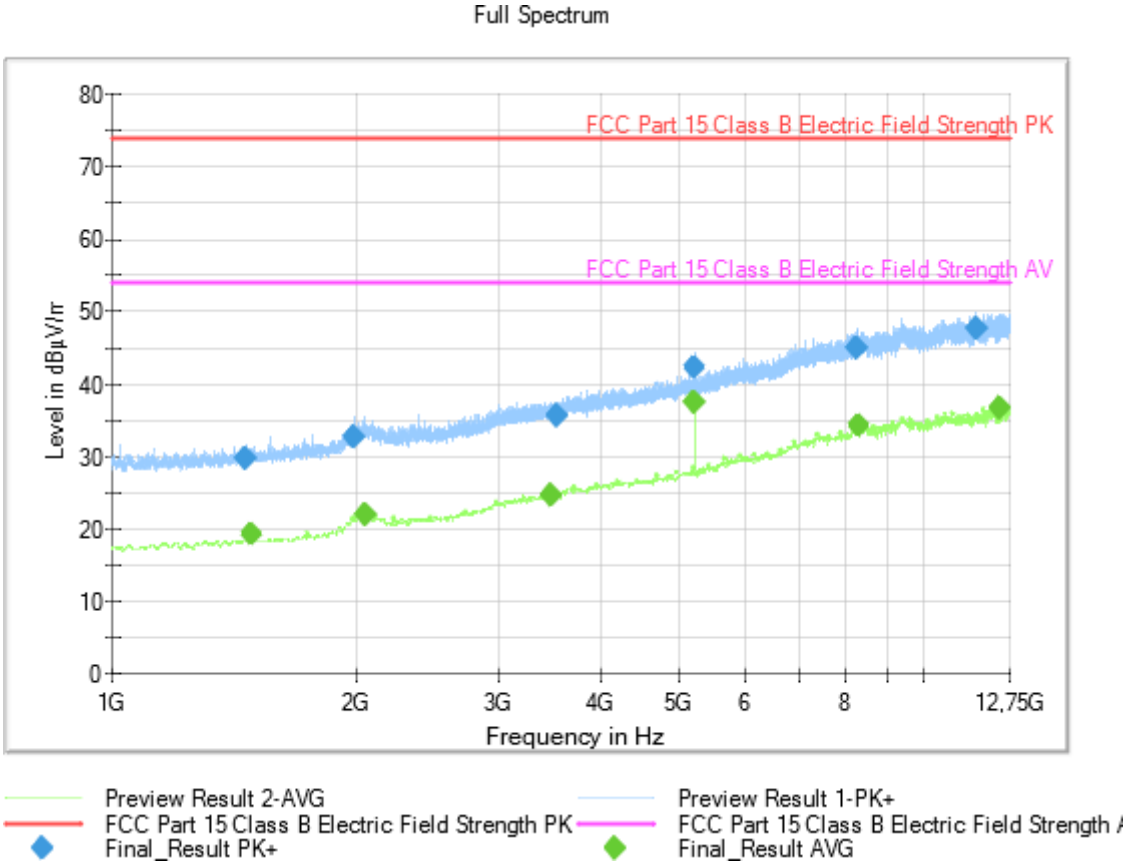
Frequency(MHz)	QuasiPeak(dBµV/m)	MaxPeak(dBµV/m)	Limit(dBµV/m)	Margin(dB)	Height(cm)	Pol	Azimuth(deg)
30.744800	15.94	---	40.00	24.06	148.0	H	317.0
30.744800	---	19.00	---	---	316.0	H	50.0
223.290000	13.97	---	---	---	316.0	H	50.0
223.290000	---	16.83	46.00	22.17	316.0	H	50.0
387.690000	21.16	---	---	---	223.0	V	2.0
387.690000	---	26.43	46.00	19.57	223.0	V	2.0
543.909000	24.06	---	---	---	252.0	V	295.0
543.909000	---	29.58	46.00	16.42	252.0	V	295.0
904.157000	29.75	---	46.00	22.25	100.0	H	293.0
904.157000	---	37.12	---	---	100.0	H	293.0
932.215000	29.60	---	---	---	100.0	H	201.0
932.215000	---	33.91	46.00	12.09	100.0	H	201.0

EMC Test Code = RE0101HR Frequency Range MHz = [1000, 12750]

Sample ID: S/01

Operation Mode: OM/01. EUT ON. ISM Radio communication active without TX. Power supply: Internal battery (3.3Vdc)

Images:



Tables:

Frequency(MHz)	MaxPeak(dBµV/m)	Average(dBµV/m)	Limit(dBµV/m)	Margin(dB)
1456.500000	29.64	---	73.97	44.33
1485.000000	---	19.15	53.97	34.82
1985.750000	32.75	---	73.97	41.22
2051.750000	---	21.99	53.97	31.98
3467.500000	---	24.56	53.97	29.41
3524.500000	35.57	---	73.97	38.40
5209.500000	---	37.40	53.97	16.57
5209.500000	42.21	---	73.97	31.76
8255.250000	45.04	---	73.97	28.93
8291.000000	---	34.37	53.97	19.60
11610.250000	47.51	---	73.97	26.46
12393.500000	---	36.60	53.97	17.37