

resideo

TH6320ZW2007
Report #: RESI-25002
FCC ID: HS9-TH6320ZW04
IC: 573R-TH6320ZW04

FCC 15.249:2024
RSS-210 issue 11
Z-Wave thermostat
Issue Date: 2025-08-27

Prepared by and for:
Resideo LLC.
2 Corporate Center Dr.
Suite 100 PO Box 9040
Melville, NY 11747

Testing
NVLAP Lab Code: 600110



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Test Report Revision History

Revision	Prepared By	Reviewed By	Revision Detail	Release Date
	Jose Badia	Christian Fouth	Original Release	2025-08-27

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Attestation of test results

Company Name: Resideo LLC., 2 Corporate Center Dr., Melville, NY 11747, USA

EUT Description: Z-Wave thermostat

Model: TH6320ZW2007

Serial Number: Non-Serialized units

Sample receipt date: 07/12/2025

Last Date of test: 08/25/2025

Standards

Specification	Method
FCC 15.207 Class B	ANSI C63.4: 2014
FCC 15.249	ANSI C63.10: 2013
RSS-210 Issue 11	ANSI C63.10: 2020
RSS-Gen Issue 5	

Guidance

FCC KDB 558074 V05R02:2019

Resideo LLC. tested the above equipment in accordance with the requirements set forth in the listed standards. All indications of Pass/Fail in the report are opinions expressed by Resideo LLC. based on interpretations and/or observations of test results. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

This document is a record of the FCC/ISED Test Report for Resideo LLC. products. It demonstrates the data required to be analyzed to certify a product according to the requirements of the FCC & ISED.

The results in the report reflect only the tested samples, under the conditions and modes of operation as described herein. Measurement Uncertainties were not taken into account and are published for informational purposes only.

This document may not be altered or revised in any way unless done so by Resideo LLC. and all revisions are duly noted in the revisions section. Any alterations of this document not carried out by Resideo LLC. will constitute fraud and shall nullify the document.

Report Prepared By:

Jose Badia

Name: Jose Badia

Title: Regulatory Certification Engineer
Resideo LLC.

Reviewed & Approved By:

Christian Fouth

Name: Christian Fouth

Title: Sr. Wireless Certification Engineer
Resideo LLC.

Test result summary

Test Description	FCC Section (s)	ISED Section (s)	Result	Comments
Radiated Emissions (Intentional)	15.249	RSS-210 Issue 11	Pass	
20 dB Bandwidth	15.249	RSS-Gen Issue 5	Pass	
99% Occupied Bandwidth	15.249	RSS-Gen Issue 5	NA	For reporting only
AC Conducted Emissions	15.207	RSS-Gen Issue 5, ICES-003	Pass	

Deviations from test standard

None

Accreditations and authorizations

USA
FCC - test site and measurement facility used to collect data are located at 2 Corporate Center Dr., Melville, NY 11747, USA. Resideo LLC. is accredited by NVLAP, Laboratory Code 600110-0 . The full scope of accreditation can be viewed at the NVLAP website. Designation Number: US5344
Canada
ISED - test site and measurement facility used to collect data are located at 2 Corporate Center Dr., Melville, NY 11747, USA. Resideo LLC. is accredited by NVLAP, Laboratory Code 600110-0 . The full scope of accreditation can be viewed at the NVLAP website. CAB Identifier: US0242

Measurement uncertainty

The measuring equipment utilized to perform the tests documented in this report have been calibrated in accordance with the manufacturer's recommendations and is traceable to recognized national standards.

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Parameter	Uncertainty
Frequency Accuracy	+/- 0.0007%
Amplitude Accuracy (dB)	+/- 1.2 dB
Radiated Emissions	9 kHz – 30 MHz +/- 3.9 dB 30 MHz – 1GHz: +/- 4.4 dB 1 GHz – 10 GHz: +/- 4.3 dB
Conducted Power (dB)	+/- 1.2 dB
Temperature (°C)	+/- 0.7
Humidity (% RH)	+/- 2.5
DC Supply Voltages	+/- 0.7 %

Uncertainty figures are valid to a confidence level of 95% based on a coverage factor (k=2)

Sample Calculation

Where relevant, the following sample calculation is provided:

Radiated Emissions

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)

Conducted Emissions:

Adjusted Level (dBuV) = Measured Voltage (dBuV) + Cable Loss (dB) + Transducer Factor (dB)

Radiated Power (EIRP) - Substitution Method:

Measured Power (dBm) = Measured Level into Substitution Antenna (dBm) + Substitution Antenna Factor (dBi)

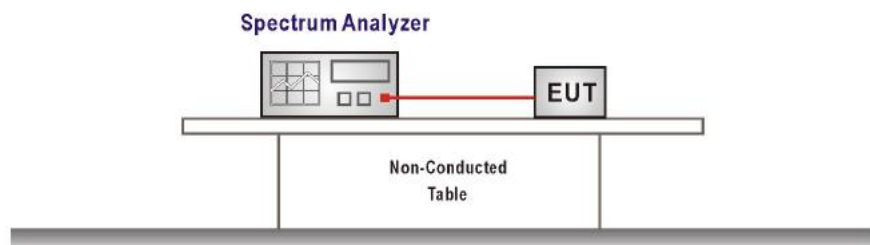
Test Setup

Measurement Bandwidths

Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
0.01 – 0.15	1.0	0.2	0.2
0.15 – 30.0	10.0	9.0	9.0
30.0 – 1000	100.0	120.0	120.0
Above 1000	1000.0	N/A	1000.0

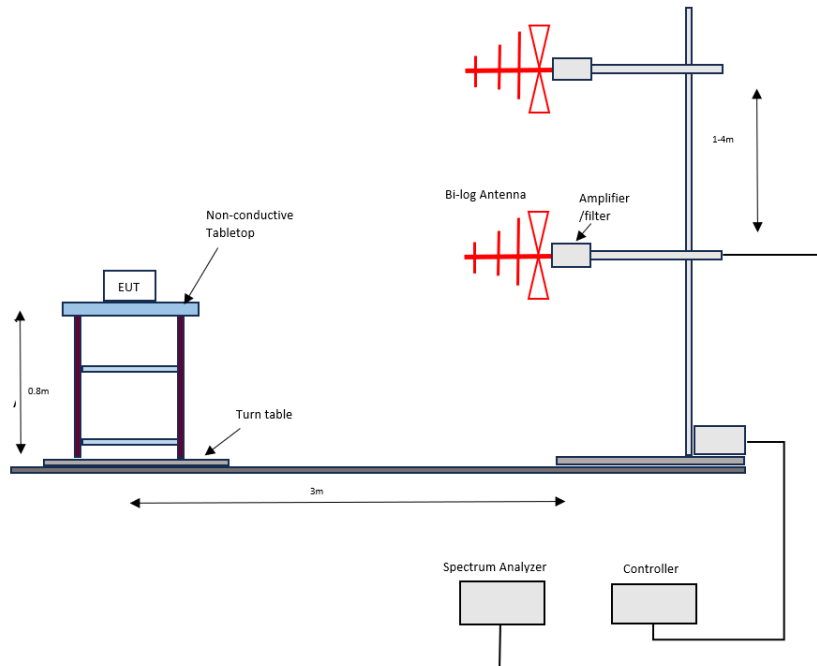
Unless otherwise stated, measurements were made using the bandwidths and detectors specified. No video filter was used.

Antenna Port conducted measurements

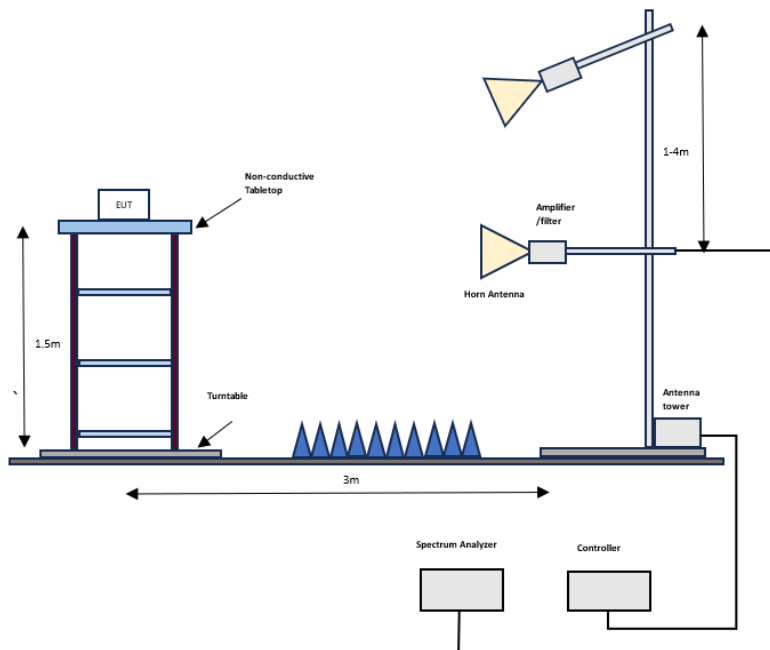


Radiated Emission measurements

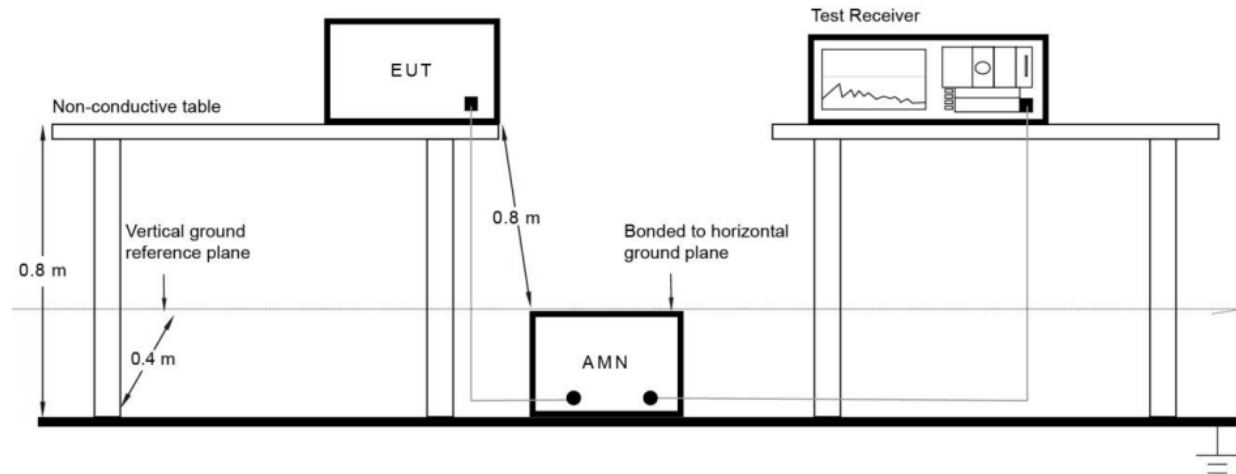
30 MHz – 1000 MHz



Above 1 GHz



AC Conducted measurements



Equipment under test

Test Item Description

The EUT is an AC powered thermostat that provides comfort control for room environmental control of residential or commercial applications. The TH6320ZW2007 employs a fully integrated Z-Wave module operating at 908.4 MHz.

Test Sample Identification

Sample ID Number	Sample Serial Number	Date Received	Equipment Condition
MEL-1179	Non-serialized production unit	07/15/2025	No damage
MEL-1180	Non-serialized production unit	07/15/2025	No damage
MEL-1181	Non-serialized production unit	07/15/2025	No damage
MEL-1182	Non-serialized production unit	07/15/2025	No damage

Worse-Case Configuration & Mode

Radiated emissions was performed with the EUT set to transmit at the single channel with the highest output power as worst-case scenario.

Power setting

The power settings below reflect the maximum power that the EUT is allowed to transmit at during normal operation.

Modulation Types	Position (if multiple channels)	Power Setting (dBm)
FSK	908.4	4.75

Antenna description

Antenna	Type	Frequency Range (MHz)	Gain (dBi)
Antenna 1	PCB Antenna	908-916 MHz	-0.34

Test & measurement equipment

The following test and measurement equipment was utilized for the tests documented in this report:

Equipment List

Instrument Type	ID #	Serial #	Manufacturer	Model	Cal Date	Cal Due Date
RF Lab (Power & Antenna Port Measurements)						
Spectrum Analyzer	1149	MY46187211	Agilent	E4440A	3/5/2024	3/5/2026
Power Sensor	11568	105317	Rohde & Schwarz	NRP-Z81	11/03/2023	11/03/2025
Attenuator	-	1624	Pasternack	PE7087-6	04/04/2024	04/03/2026
RF Chamber						
Spectrum Analyzer	11545	103125	Rohde & Schwarz	FSW26	11/07/2023	11/07/2025
Loop Antenna (9kHz-30MHz)	11535	121080	Com-Power	AL-130R	3/4/2024	3/4/2026
Bilog Antenna (30MHz-5GHz)	11534	A012816	Sunol	JB6	3/4/2024	3/4/2026
Horn Antenna (1-18GHz)	2319	2317	EMCO	3115	11/30/2023	11/30/2025
Preamp (10-4200MHz)	11537	1603006	Mini Circuits	TVA-11-422	04/17/2025	04/16/2026
Preamp (500MHz-18GHz)	11557	18040034	Com-Power	PAM-118A	04/17/2025	04/16/2026
Band Reject Filter	11553	G041	Micro-tronics	BRM50702-01	04/04/2025	04/03/2026

RF Cable	-	-	Mini-Circuits	RDE#2	04/18/2025	04/17/2026
RF Cable	-	-	Insulated Wire	SMA#8	04/18/2025	04/17/2026
OATS						
Spectrum Analyzer	11545	103125	Rohde & Schwarz	FSW26	11/07/2023	11/07/2025
Bilog Antenna (30MHz-6GHz)	11534	A012816	Sunol	JB6	3/4/2024	3/4/2026
Horn Antenna (1-18GHz)	2973	3127	EMCO	RGA-60	11/30/2023	11/30/2025
Preamp (100kHz-1.3GHz)	11540	2443AUF555	HP	8447D	04/18/2025	04/17/2026
Preamp (1-18GHz)	11539	160362	Amplicial	AMP1G18-35	04/17/2025	04/16/2026
High Pass Filter	11552	G018	Micro-tronics	HPM50111-01	03/28/2025	03/27/2026
RF Cable	-	-	Pasternack	RDE#1	04/17/2025	04/16/2026
RF Cable	-	-	MegaPhase	EMC2-S1S1-360	04/17/2025	04/16/2026
Misc.						
Measurement Software	11543	Version 9.5	UL	UL EMC	N/A	N/A
Environmental Meter	11533	A070144	Extech Instruments	SD700		

*-Passive devices & Preamps are characterized in-house, not calibrated.

Antenna Port measurements

20dB Bandwidth

Test Description

Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 20 dB relative to the maximum level measured in the fundamental emission.

Test Criteria

Reference	Limit
CFR 47 Subpart C 15.249:2024	None, for reporting only
RSS-210	

Test Information

Tester	Test Location	Date	Temperature (°C)	Humidity (%RH)	Pressure (mbar)	Results (P/F)
Jose Badia	Melville	08/6/2025	20.5	54	1012	Pass

Test Results

Channel	Frequency (MHz)	20db Bandwidth (kHz)
CH0	908.4	87.907

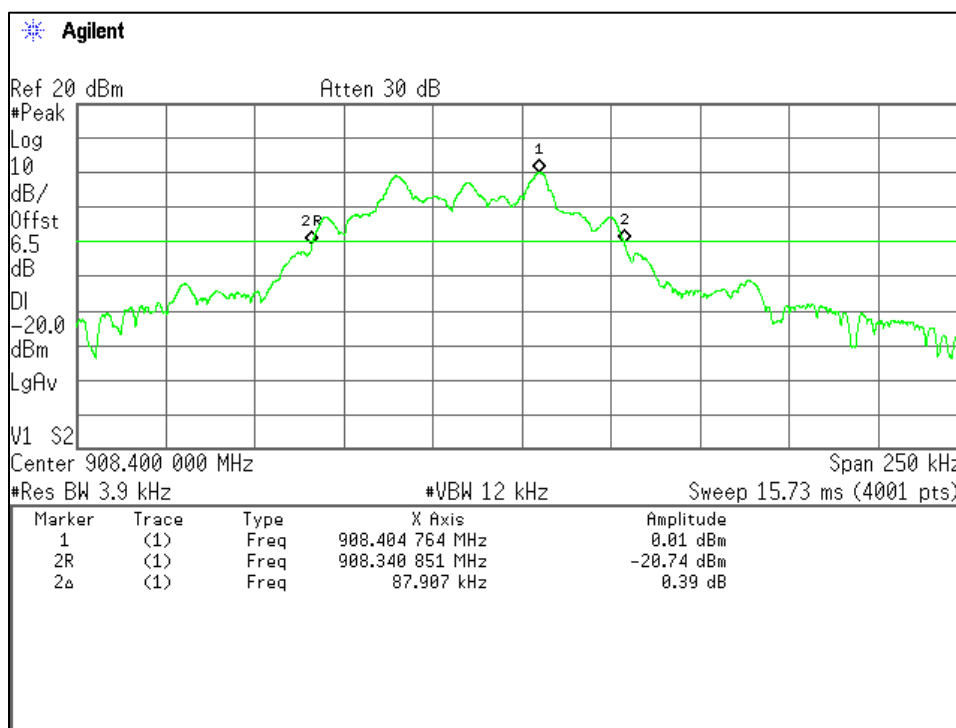


Figure 1 20 dB Bandwidth

99% Occupied Bandwidth

Test Description

The emission bandwidth (x 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 x 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 3x 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.

Test Criteria

Reference	Limit
RSS-GEN, Section 6.7	N/A

Test Information

Tester	Test Location	Date	Temperature (°C)	Humidity (%RH)	Pressure (mbar)	Results (P/F)
Jose Badia	RF Lab	8/6/2025	20.5	54	1012	P

Test Results

Channel	Frequency (MHz)	99% Bandwidth (kHz)
CH0	908.4	84.1143

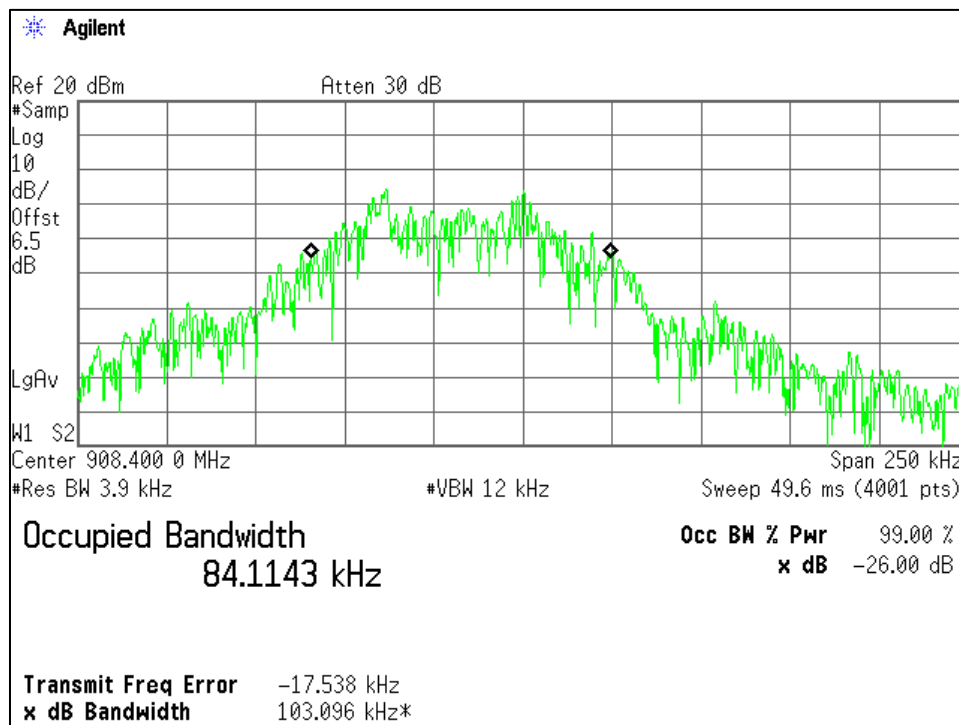


Figure 2 99% Occupied Bandwidth

Radiated Emissions

Test Criteria

Reference	Limit		
CFR 47 Subpart C, 15.205 CFR 47 Subpart C, 15.209	Frequency Range (MHz)	Field Strength Limit (uV/m)	Measurement distance (meters)
	0.009-0.490	2400/F(kHz)	300
	0.490-1.705	24000/F(kHz)	30
	1.705-30.0	30	30
	30-88	100	3
	88-216	150	3
	216-960	200	3
	Above 960	500	3

¹Linear interpolation

Reference	Limit		
CFR 47 Subpart C, 15.249	Frequency Range (MHz)	Field Strength Limit of fundamental (mV/m) @ 3m	Field Strength Limit of Harmonics (uV/m) @ 3m
	902-928	50	500

Fundamental

Test Information

Tester	Test Location	Date	Temperature (°C)	Humidity (%RH)	Pressure (mbar)	Results (P/F)
Jose Badia	Melville, OATS	08/25/2025	25	62	1009	Pass

Test results

Frequency (MHz)	Meter Reading (dBuV)	Det	2024_10mh	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Azimuth (Degs)	Height (cm)	Polarity
908.376	51.89	Pk	27.1	3.8	82.79	360	101	H
908.376	55.21	Pk	27.1	3.8	86.11	339	125	V

Pk - Peak detector

FCC Pt 15 Subpart C 30-1000MHz.TST

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Spurious Radiated Emissions

Test Description

The EUT is positioned to get the maximum emissions after a series of prescan measurements. The EUT is placed on a non-conducting table 80 cm above the ground plane for below 1 GHz measurements and 1.5 m above the ground plane for above 1 GHz measurements. The antenna to EUT distance is 3 meters.

For measurements below 1 GHz the resolution bandwidth is set to 120 kHz for peak detection measurements and/or 120 kHz for quasi-peak detection measurements in the 30-1000MHz range. Peak detection is used unless otherwise noted as quasi-peak.

For pre-scans above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 kHz for peak measurements.

For final measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and as applicable for average measurements.

The spectrum from 30 MHz to 10 GHz is investigated with the transmitter set to the lowest, and highest channels in each applicable band.

The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

The EUT is set to transmit in a continuous mode.

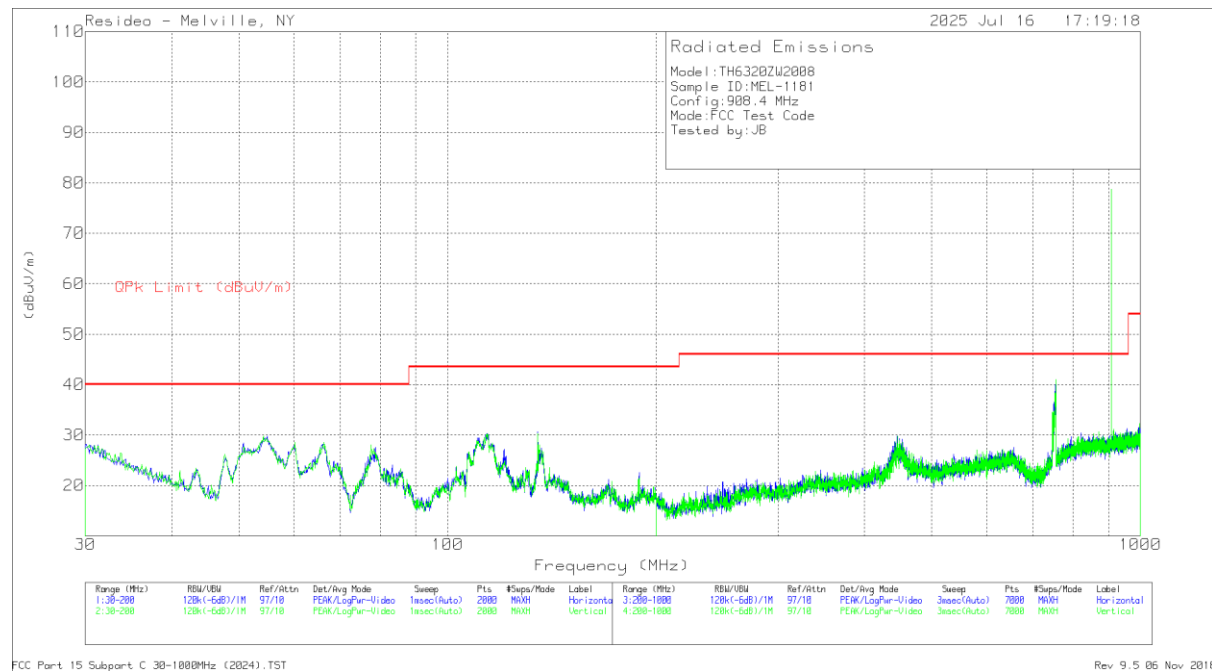
Test Information

Tester	Test Location	Date	Temperature (°C)	Humidity (%RH)	Pressure (mbar)	Results (P/F)
Jose Badia	Melville, OATS	07/24/2025	26.7	67	1005	Pass

NOTE: Below 30MHz, pretesting showed that no emissions as a product of the EUT were detected within 20dB of the regulatory limit. Prescans performed in an anechoic chamber, final measurements performed on an OATS.

Below 1GHz

Test results



Radiated Emissions

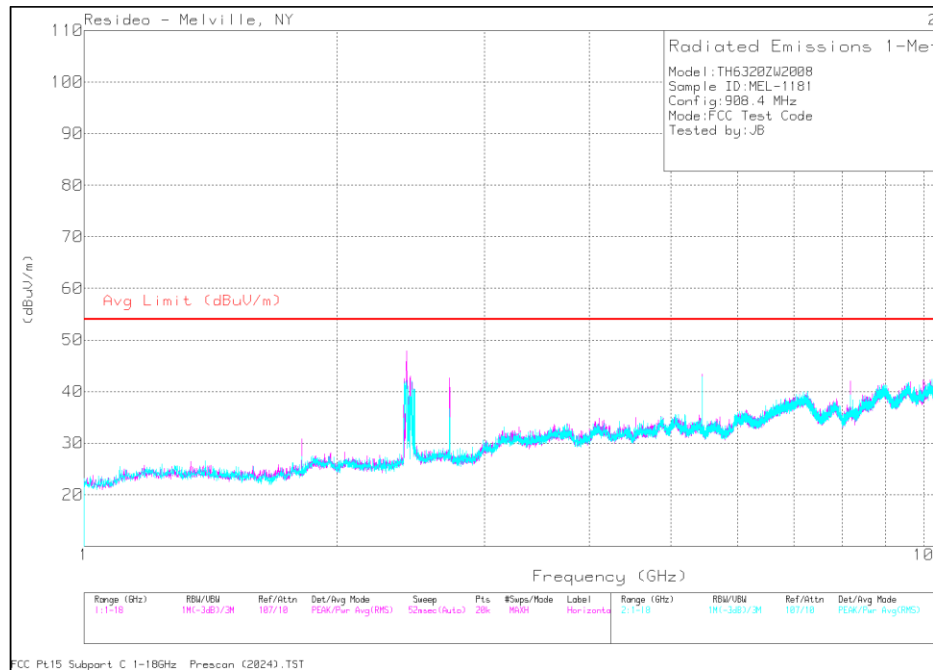
Frequency (MHz)	Meter Reading (dBuV)	Det	2024_10mh	Gain/Loss (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 114.5206	11.07	Qp	17.8	1.3	30.17	43.52	-13.35	157	373	H
* 134.55	5.79	Qp	17.9	1.4	25.09	43.52	-18.43	222	377	H
* 114.976	14.03	Qp	17.8	1.3	33.13	43.52	-10.39	16	296	V
* 134.9806	19.23	Qp	17.9	1.4	38.53	43.52	-4.99	205	141	V
756.5	3.79	Qp	25.3	3.3	32.39	46.02	-13.63	120	346	H
756.7272	4.09	Qp	25.3	3.3	32.69	46.02	-13.33	91	334	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Qp - Quasi-Peak detector

FCC Pt 15 Subpart C 30-1000MHz.TST

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1-10GHz**Test results****Radiated Emissions**

Frequency (GHz)	Meter Reading (dBuV)	Det	AF [dB/m]	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.817	46.87	PK2	26.9	-37.4	36.37	-	-	74	-37.63	155	242	H
1.817	41.16	MAv1	26.9	-37.4	30.66	54	-23.34	-	-	155	242	H
* 2.725	48.21	PK2	29	-37.9	39.31	-	-	74	-34.69	143	145	H
* 2.725	43.91	MAv1	29	-37.9	35.01	54	-18.99	-	-	143	145	H
* 5.45	42.66	PK2	34.4	-33.1	43.96	-	-	74	-30.04	135	300	H
* 5.45	33.04	MAv1	34.4	-33.1	34.34	54	-19.66	-	-	135	300	H
* 8.178	39.88	PK2	37	-29.2	47.68	-	-	74	-26.32	127	372	H
* 8.175	28.18	MAv1	37	-29.2	35.98	54	-18.02	-	-	127	372	H
1.817	44.58	PK2	26.9	-37.4	34.08	-	-	74	-39.92	26	130	V
1.817	36.52	MAv1	26.9	-37.4	26.02	54	-27.98	-	-	26	130	V
* 2.725	48.27	PK2	29	-37.9	39.37	-	-	74	-34.63	230	386	V
* 2.725	43.7	MAv1	29	-37.9	34.8	54	-19.2	-	-	230	386	V
* 5.451	41.39	PK2	34.4	-33.1	42.69	-	-	74	-31.31	104	180	V
* 5.45	31.42	MAv1	34.4	-33.1	32.72	54	-21.28	-	-	104	180	V
* 8.175	39.46	PK2	37	-29.2	47.26	-	-	74	-26.74	190	355	V
* 8.176	28.88	MAv1	37	-29.2	36.68	54	-17.32	-	-	190	355	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

FCC Pt15 Subpart C 1-10GHz - Preamp In Filter Out (HP Filter In).TST

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Powerline conducted emissions

EUT:	MEL-1181	Date:	07/24/2025
Serial Number	Non-serialized	Temperature	21.7 °C
Customer:	Resideo	Relative Humidity	49
Tested By:	Jose Badia	Bar Pressure:	1019
Power:		Job site	Melville, NY

Test specifications

Specification: Equipment Class B	Method
FCC 15.107:2023	ANSI C63.4:2014
RSS-Gen Issue 5:2018+A1:2019+A2:2021	ANSI C63.4:2014

Test parameters

Run#:		Polarity	Neutral	Additional Ext. Attenuation (dB)	
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EUT OPERATING MODE:

FCC Test Mode

DEVIATIONS FROM TEST STANDARDS:

None

Test results

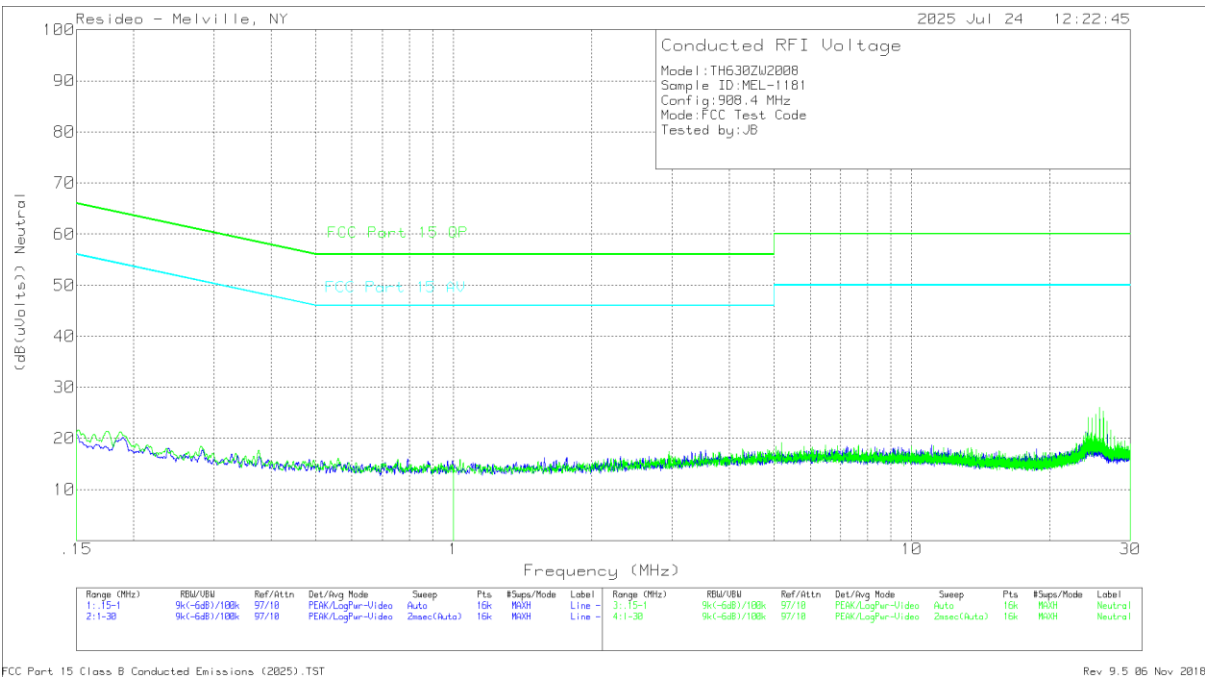


Figure 3 Powerline conducted emissions - Neutral

Conclusion

Pass

Test parameters

Run#:		Polarity	Line	Additional Ext. Attenuation (dB)	
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EUT OPERATING MODE:

FCC Test Mode

DEVIATIONS FROM TEST STANDARDS:

None

Test results

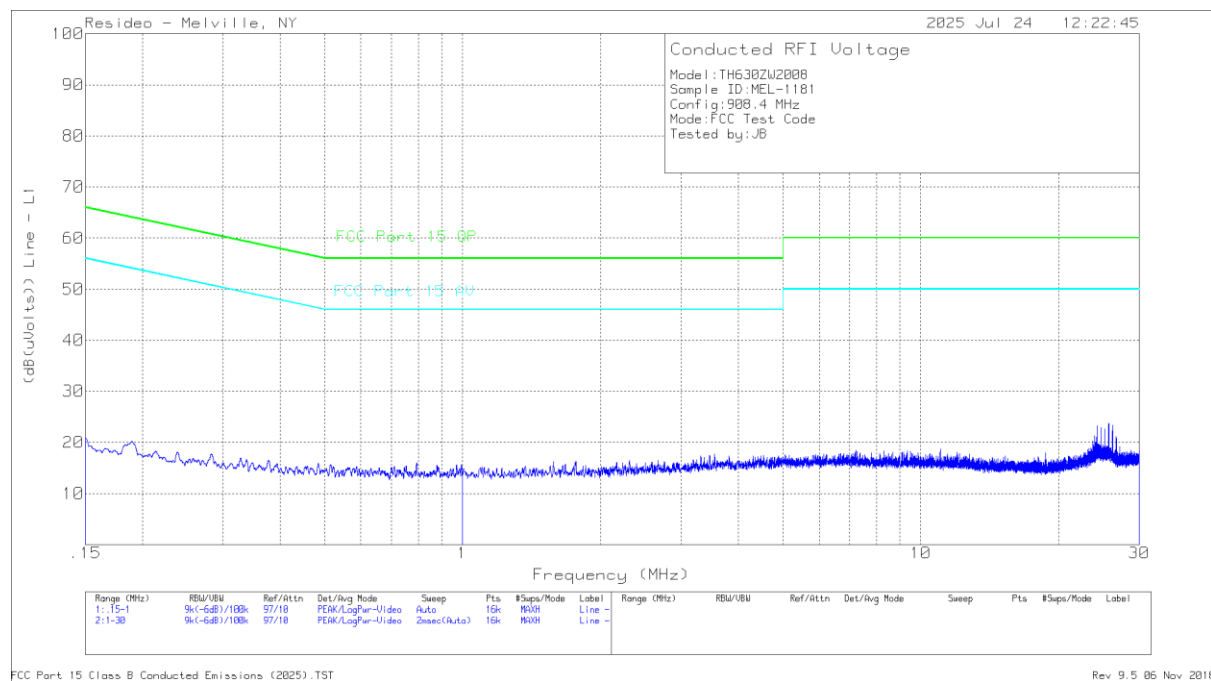


Figure 4 Powerline conducted emissions - Line

Conclusion:

Pass

Report #: RESI-25002



END OF REPORT