



FCC Test Report

Report No.: LDF-ESH-P24111301B-2

FCC ID: DWN-GL2UWF50ZHP

Product: GLYDEA2 ULTRA WF 50 ZIGBEE HP

Test Model: 1246594

Received Date: Nov.25, 2024

Test Date: Nov.25 to Dec.24, 2024

Issued Date: Dec.26, 2024

Applicant: Somfy Systems, Inc.

Address: 121 Herrod Blvd. Dayton, NJ 08810

Manufacturer: Somfy Systems, Inc.

Address: 121 Herrod Blvd. Dayton, NJ 08810

Issued By: BUREAU VERITAS ADT (Shanghai) Corporation

Lab Address: No. 829, Xinzhuang Road, Shanghai, P.R.China (201612)



This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/> and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

Table of Contents

Release Control Record	4
1 Certificate of Conformity	5
2 Summary of Test Results	6
2.1 Test Instruments	7
2.2 Measurement Uncertainty	8
2.3 Modification Record	8
3 General Information	9
3.1 General Description of EUT	9
3.2 Description of Test Modes	10
3.2.1 Test Mode Applicability:	11
3.2.2 Test Condition:	12
3.3 Description of Support Units	13
3.4 General Description of Applied Standards	13
4 Test Procedure and Results	14
4.1 AC Power Conducted Emission	14
4.1.1 Limits	14
4.1.2 Test Procedures	14
4.1.3 Deviation from Test Standard	14
4.1.4 Test Setup	15
4.1.5 EUT Operating Conditions	15
4.1.6 Test Results	16
4.2 Minimum 6dB Bandwidth	20
4.2.1 Limit	20
4.2.2 Test Setup	20
4.2.3 Test Procedures	20
4.2.4 Deviation of Test Standard	20
4.2.5 Test Results	21
4.3 Conducted Output Power	23
4.3.1 Limit	23
4.3.2 Test Setup	23
4.3.3 Test Procedures	23
4.3.4 Deviation of Test Standard	23

4.3.5	Test Results	24
4.4	Power Spectral Density	26
4.4.1	Limit	26
4.4.2	Test Setup	26
4.4.3	Test Procedures	26
4.4.4	Deviation of Test Standard.....	26
4.4.5	Test Results	27
4.5	Conducted Band Edges Measurement	29
4.5.1	Limit	29
4.5.2	Test Setup	29
4.5.3	Test Procedures	29
4.5.4	Deviation of Test Standard.....	29
4.5.5	Test Results	30
4.6	Conducted Spurious Emissions.....	31
4.6.1	Limit	31
4.6.2	Test Setup	31
4.6.3	Test Procedures	31
4.6.4	Deviation of Test Standard.....	31
4.6.5	Test Results	32
4.7	Emissions in restricted frequency bands.....	36
4.7.1	Test Limit.....	36
4.7.2	Test Procedure Reference.....	37
4.7.3	Test Procedures	37
4.7.4	Test Setup	38
4.7.5	Test Results	39
4.8	Radiated Emission Measurement.....	41
4.8.1	Limits	41
4.8.2	Test Procedures	41
4.8.3	Deviation from Test Standard.....	42
4.8.4	Test Setup	43
4.8.5	EUT Operating Conditions.....	44
4.8.6	Test Results	44
5	Pictures of Test Arrangements	49



Release Control Record

Issue No.	Description	Date Issued
LDF-ESH-P24111301B-2	Original release	Dec.26, 2024

1 Certificate of Conformity

Product: GLYDEA2 ULTRA WF 50 ZIGBEE HP

Brand: **somfy**

Test Model: 1246594

Applicant: Somfy Systems, Inc.

Test Date: Nov.25 to Dec.24, 2024

Standards: 47 CFR FCC Part 15, Subpart C (Section 15.247)
ANSI C63.10:2020

The above equipment has been tested by **BUREAU VERITAS ADT (Shanghai) Corporation**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by :  , **Date:** Dec.26, 2024
Yan ZHOU Project Engineer

Approved by :  , **Date:** Dec.26, 2024

Sean YU
RF Supervisor

2 Summary of Test Results

The EUT has been tested according to the following specifications:

47 CFR FCC Part 15, Subpart C (SECTION 15.247)			
FCC Clause	Test Item	Result	Remarks
15.203	Antenna Requirement	PASS	No antenna connector is used.
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit.
15.247(a)(2)	Minimum 6dB Bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted Output Power	PASS	Meet the requirement of limit.
15.247(e)	Power Spectral Density	PASS	Meet the requirement of limit.
15.247(d)	Conducted Band Edges Measurement	PASS	Meet the requirement of limit.
15.247(d)	Conducted Spurious Emissions	PASS	Meet the requirement of limit.
15.247(d)	Emissions in restricted frequency bands	PASS	Meet the requirement of limit.
15.205 / 15.209 / 15.247(d)	Radiated Emissions Measurement	PASS	Meet the requirement of limit.

2.1 Test Facility

Laboratory Name: Bureau Veritas ADT (ShangHai) Corporation

Laboratory Address: No.829, Xin Zhuan Road, Song Jiang District, Shanghai, China

Test Location: No.829, Xin Zhuan Road, Song Jiang District, Shanghai, China

A2LA Lab Code: 2343.01

FCC-Recognized Accredited Testing Lab: CN1213

ISED Recognized Lab: 6392A

FCC Accredited Test Site Number: 176467

2.2 Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Hybrid Antenna(30MHz-1GHz)	Schwarzbeck	VULB9168	E1A1012	8/17/2023	8/16/2025
Horn Antenna(1GHz -18GHz)	Schwarzbeck	BBHA9120D	E1A1017	7/2/2024	7/1/2025
Horn Antenna(18GHz-40GHz)	Com-Power	AH-840	E1A1040	7/24/2024	7/23/2026
Pre-Amplifier(0.1MHz~1300MHz)	Agilent	8447D	E1A2001	2/18/2024	2/17/2025
Pre-Amplifier(18GHz-40GHz)	EMC Instruments Corporation	EMC184045SE	E1A2008	8/10/2024	8/9/2025
EMI Test Receiver	R&S	ESR7	E1R1005	2/18/2024	2/17/2025
EMI Test Spectrum	Keysight	N9030B	E1S1003	8/28/2024	8/27/2025
Signal Analyzer	Keysight	N9020A	E1S1004	2/19/2024	2/18/2025
EMI Test Receiver	R&S	ESR3	E1R1008	5/31/2024	5/30/2025
LISN(signle phase)	Rohde&Schwarz	ENV216	E1L1011	8/12/2024	8/11/2025
RF Control Unit	Toscend	JS0806-2	E1C5003	N/A	N/A
Test Software	Toscend	JS32-CE	5.0.0.1	N/A	N/A
Test Software	Toscend	JS32-RE	5.0.0	N/A	N/A
Test Software	Toscend	JS1120-3	V3.2.22	N/A	N/A

The Test Coax Cable is placed in the receiver and the combination is calibrated as a single unit before acquiring data. Calibration Date: 11/25/24.

2.3 Measurement Uncertainty

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

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

Measurement	Frequency	Expanded Uncertainty ($k=2$) (\pm)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.83 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.36 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	3.47 dB
	6GHz ~ 18GHz	3.75 dB
	18GHz ~ 40GHz	3.30 dB

2.4 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	GLYDEA2 ULTRA WF 50 ZIGBEE HP
Brand	somfy [®]
Test Model	1246594
Power Rating	30W 0.7 Nm 21.9V --- 20min ON
Modulation Type	O-QPSK
Modulation Technology	6LoWPAN
Operating Frequency	2405MHz to 2480MHz
Number of Channel	16
Antenna Type	FPC Dipole Antenna
Antenna Connector	--
Antenna Gain	1dBi

Note: For more details, please refer to the User's manual of the EUT.

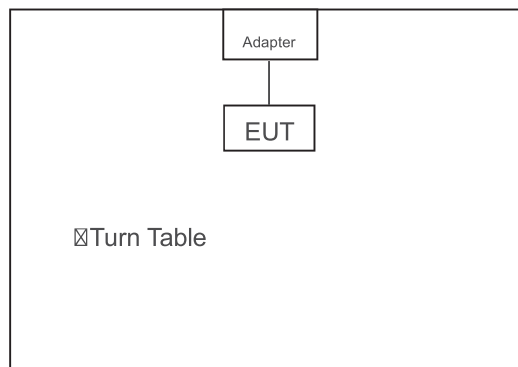
3.2 Description of Test Modes

16 channels are provided for Zigbee.

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
11	2405 MHz	19	2445 MHz
12	2410 MHz	20	2450 MHz
13	2415 MHz	21	2455 MHz
14	2420 MHz	22	2460 MHz
15	2425 MHz	23	2465 MHz
16	2430 MHz	24	2470 MHz
17	2435 MHz	25	2475 MHz
18	2440 MHz	26	2480 MHz

3.3 DESCRIPTION OF SYSTEM UNDER TEST

RADIATED TEST CONFIGURATION



3.3.1 Test Mode Applicability:

EUT Configure Mode	Applicable to				Description
	RE ≥ 1G	RE < 1G	PLC	APCM	
-	√	√	√	√	-

Where **RE≥1G**: Radiated Emission above 1GHz **RE< 1G**: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission **APCM**: Antenna Port Conducted Measurement

Radiated Emission Test (Above 1 GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	Zigbee	11 to 26	11,18, 26	DSSS	OQPSK	250kbps

Radiated Emission Test (Below 1 GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	Zigbee	11 to 26	11	DSSS	OQPSK	250kbps

Power Line Conducted Emission Test:

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	Zigbee	11 to 26	11	DSSS	OQPSK	250kbps

Antenna Port Conducted Measurement

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	Zigbee	11 to 26	11,18, 26	DSSS	OQPSK	250kbps

3.3.2 Test Condition:

Applicable to	Normal Environmental Conditions	Normal Input Power
RE ≥ 1G	23deg. C, 58%RH	Powered by Battery
RE < 1G	23deg. C, 58%RH	Powered by Battery
PLC	23deg. C, 58%RH	Powered by Battery
APCM	23deg. C, 60%RH	Powered by Battery

3.4 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units.

3.5 General Description of Applied Standards

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standard:

FCC Part 15, Subpart C (15.247)

KDB 558074 D01 DTS Meas Guidance v05r02

ANSI C63.10: 2020

All relaxed test items have been performed and recorded as per the above standard.

4 Test Procedure and Results

4.1 AC Power Conducted Emission

4.1.1 Limits

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Note: 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.1.2 Test Procedures

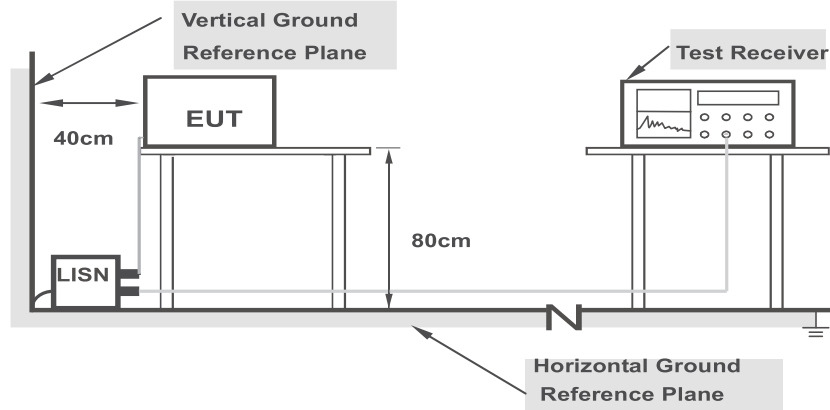
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

NOTE: The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.

4.1.3 Deviation from Test Standard

No deviation.

4.1.4 Test Setup



Note: 1.Support units were connected to second LISN.

For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.5 EUT Operating Conditions

Same as 4.1.6.