EMC TEST REPORT

Applicant	Phillips Connect Technologies, LLC
FCC ID	2ASKH-SN01
Product	SolarNet CAN
Brand	Phillips Connect
Model	77-7571
Report No.	R2408A1060-E1V1
Issue Date	October 15, 2024

Eurofins TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC Code CFR47 Part15B (2021)/ ANSI C63.4-2014**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Liu Wei

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Version	Revision description	Issue Date
Rev.0	Initial issue of report.	September 4, 2024
Rev.1	Updated information, data, and description.	October 15, 2024
Note: This revised report (Report No. R2408A1060-E1V1) supersedes and replaces the previously issued report (Report No. R2408A1060-E1). Please discard or destroy the previously issued report and dispose of it accordingly.		

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Summary of measurement results

Number	Test Case	Clause in FCC Rules	Conclusion
1	Radiated Emission	FCC Part15.109, ANSI C63.4-2014	PASS
2	Conducted Emission	FCC Part15.107, ANSI C63.4-2014	Not Test [1]
Date of Testing: August 12, 2024 Date of Sample Received: August 8, 2024			
Note: 1. Not Test means after evaluation, test items are no need to test, the test results please refer to Original Report. 2. All indications of Pass/Fail in this report are opinions expressed by Eurofins TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.			

77-7571 (Report No.: R2408A1060-E1V1) is a variant model of 77-7700-13J (Report No.: R2207A0680-E1V1).
The changes are as follows:
add secondary battery
add solar panel in enclosure
This product also changes Product Name, Model Name, HW Version and SW Version.

This report tests Radiated Emission, and recorded in the report.
This report is used in conjunction with the original report (Report No.: R2207A0680-E1V1).

The detailed product change description please refers to the *FCC C2PC letter*.

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1 Test Laboratory

1.1 Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of **Eurofins TA technology (shanghai) co., Ltd.** The results documented in this report apply only to the tested sample, 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 report is written to support regulatory compliance of the applicable standards stated above.

1.2 Test facility

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

Eurofins TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform measurements.

A2LA (Certificate Number: 3857.01)

Eurofins TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform measurement.

1.3 Testing Location

Company:	Eurofins TA Technology (Shanghai) Co., Ltd.
Address:	Building 3, No.145, Jintang Rd, Pudong Shanghai, P.R.China
City:	Shanghai
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2 General Description of Equipment under Test

2.1 Applicant and Manufacturer Information

Applicant	Phillips Connect Technologies, LLC
Applicant address	5231 California Avenue, Suite 110, Irvine, CA 92617
Manufacturer	Phillips Connect Technologies, LLC
Manufacturer address	5231 California Avenue, Suite 110, Irvine, CA 92617

2.2 General information

EUT Description			
Device Type	Movable Device		
Model	77-7571		
Lab internal SN	R2408A1060/S01		
HW Version	Freight P6+Arrow P3		
SW Version	V2.0		
Power Rating	DC 3.65V from battery.		
Connecting I/O Port(s)	Please refer to the User's Manual.		
Antenna Type	Internal Antenna		
Frequency	Band	Tx (MHz)	Rx (MHz)
	WCDMA Band II	1850 ~ 1910	1930 ~ 1990
	WCDMA Band IV	1710 ~ 1755	2110 ~ 2155
	WCDMA Band V	824 ~ 849	869 ~ 894
	LTE Band 2	1850 ~ 1910	1930 ~ 1990
	LTE Band 4	1710 ~ 1755	2110 ~ 2155
	LTE Band 12	699 ~ 716	729 ~ 746
	Bluetooth	2400 ~ 2483.5	2400 ~ 2483.5
EUT Accessory			
Battery 1	Manufacturer: Dongguan Kingin power Co., Ltd. Model: HRBS01-C DC 3.65V, 10600mAh		
Battery 2	Manufacturer: EVE Model: JL001 DC 3.65V, 12800mAh		
Note: 1. The EUT is sent from the applicant to Eurofins TA and the information of the EUT is declared by the applicant.			

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2.3 Applied Standards

According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

Test standards
FCC Code CFR47 Part15B (2021)
ANSI C63.4-2014

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2.4 Test Mode

Test Mode	
Mode 1	External Power Supply + EUT + WCDMA/LTE/Bluetooth Receiver

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3 Test Case Results

3.1 Radiated Emission

Ambient condition

Temperature	Relative humidity	Pressure
15°C~35°C	30%~60%	101.5kPa

Methods of Measurement

The EUT is placed on a non-metallic table 0.8m above the horizontal metal reference ground plane. The distance between EUT and receive antenna should be 3 meters. During the test, the EUT was operating in its typical mode. The test method is according to ANSI C63.4-2014. Sweep the whole frequency band through the range from 30MHz to the 5th harmonic of the carrier. During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turn table shall be rotated from 0 to 360 degrees for detecting the maximum of radiated signal level.
The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing. During the test, the EUT is worked at maximum output power.
Set the spectrum analyzer in the following:

Below 1GHz:
RBW=100 kHz / VBW=300 kHz / Sweep=AUTO
Above 1GHz:

(a) PEAK Detector: RBW=1MHz / VBW=3MHz/ Sweep=AUTO
(b) AVERAGE Detector: RBW=1MHz / VBW=3MHz / Sweep=AUTO

The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in lie-down position (X axis) and the worst case was recorded.

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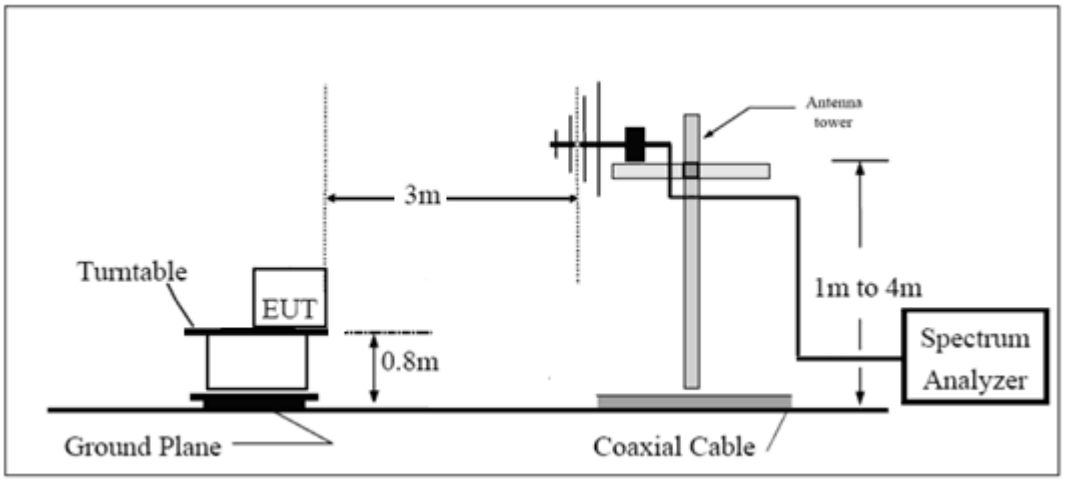
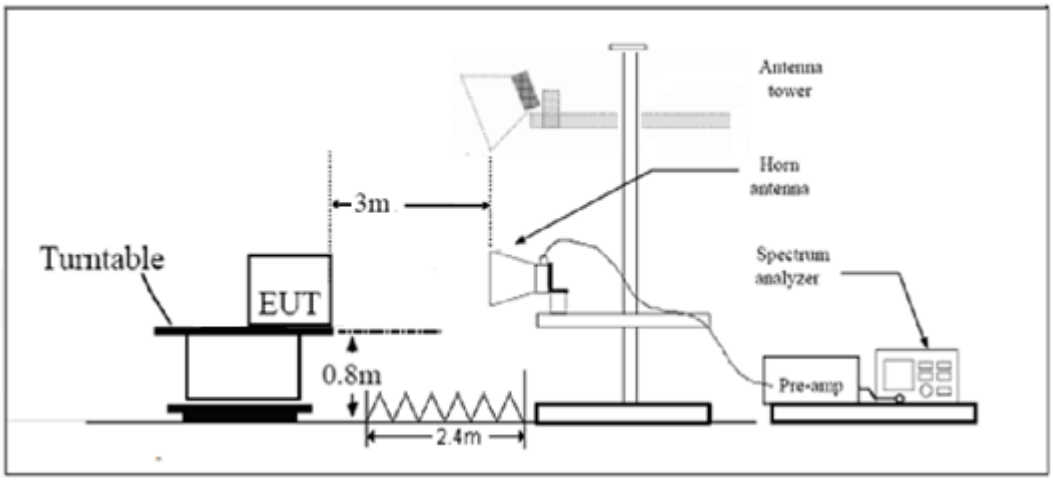
Test Setup

Below 1GHz



Above 1GHz



Note: Area side: 2.4mX3.6m

Antenna Tower meets ANSI C63.4 requirements for measurements above 1 GHz by keeping the antenna aimed at the EUT during the antenna's ascent/ descent along the antenna mast.

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Limits

Class B

Frequency (MHz)	Field Strength (dBµV/m)	Detector
30 -88	40.0	Quasi-peak
88-216	43.5	Quasi-peak
216 – 960	46.0	Quasi-peak
960-1000	54.0	Quasi-peak
1000-5th harmonic of the highest frequency or 40GHz, which is lower	54 74	Average Peak

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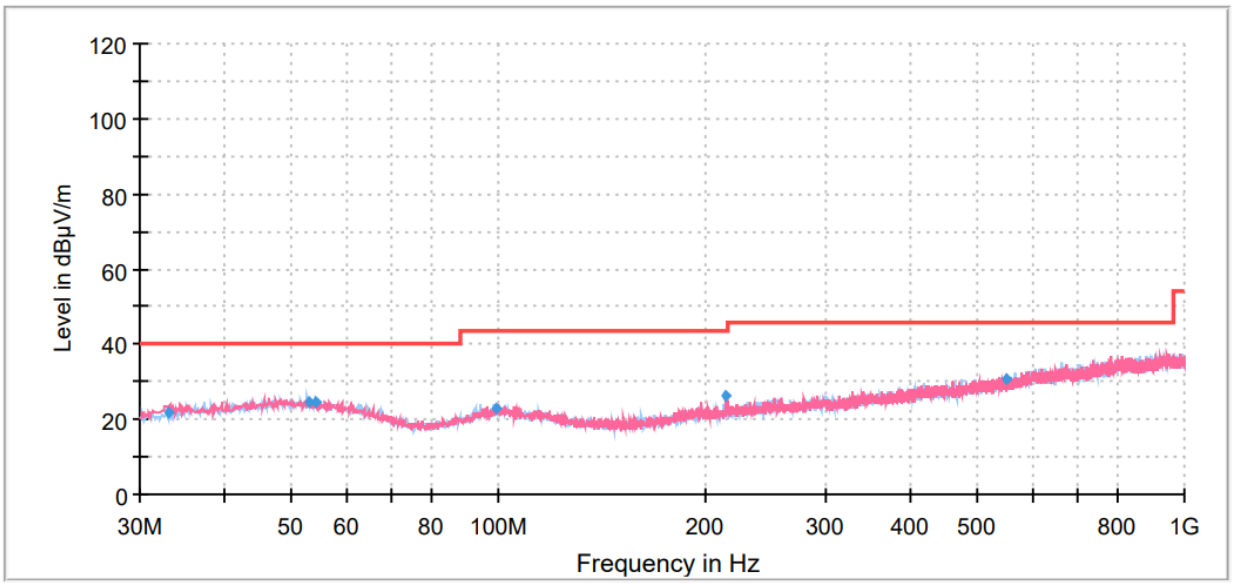
Test Results

Sweep the whole frequency band through the range from 30MHz to the 5th harmonic of the carrier.

The following graphs display the maximum values of horizontal and vertical by software.
For above 1GHz, Blue trace uses the peak detection, Green trace uses the average detection.



Radiated Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
33.10	22.04	40.00	17.96	1000.00	199.0	V	227.00	18
52.83	24.67	40.00	15.33	1000.00	101.0	H	286.00	20
53.98	24.56	40.00	15.44	1000.00	176.0	H	110.00	20
99.24	22.91	43.50	20.59	1000.00	112.0	H	22.00	19
214.48	26.29	43.50	17.21	1000.00	217.0	V	188.00	18
551.24	30.70	46.00	15.30	1000.00	218.0	V	308.00	26

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)
2. Margin = Limit – Quasi-Peak

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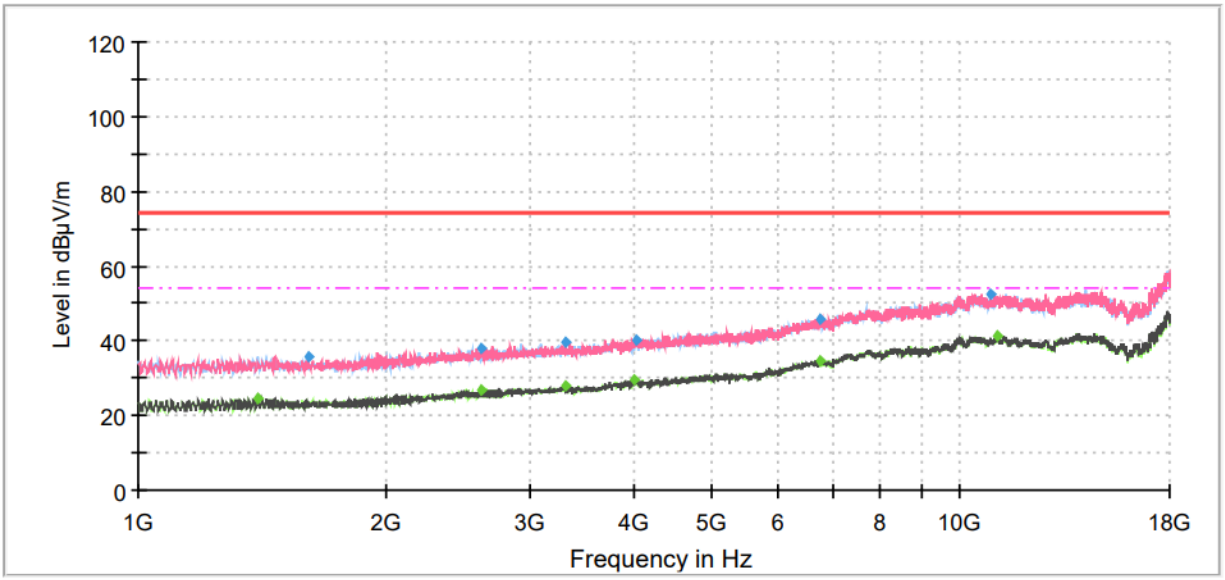

Radiated Emission from 1GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1399.50	---	24.74	54.00	29.26	500.00	200.0	V	336.00	-20
1614.13	35.53	---	74.00	38.47	500.00	200.0	V	287.00	-20
2612.88	---	26.93	54.00	27.07	500.00	200.0	H	209.00	-17
2615.00	38.17	---	74.00	35.83	500.00	200.0	V	244.00	-17
3305.63	39.74	---	74.00	34.26	500.00	200.0	V	244.00	-16
3309.88	---	27.69	54.00	26.31	500.00	200.0	V	287.00	-16
4015.38	---	29.53	54.00	24.47	500.00	100.0	V	103.00	-13
4026.00	40.38	---	74.00	33.62	500.00	200.0	V	138.00	-13
6750.25	45.85	---	74.00	28.15	500.00	100.0	H	317.00	-5
6763.00	---	34.72	54.00	19.28	500.00	200.0	V	0.00	-5
10885.50	52.57	---	74.00	21.43	500.00	100.0	V	138.00	0
11083.13	---	41.11	54.00	12.89	500.00	100.0	V	4.00	1

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)

2. Peak Margin = Limit –MAX Peak/ Average

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4 Uncertainty Measurement

Case	Uncertainty	Factor k
Radiated Emission 30MHz – 200MHz	4.17 dB	1.96
Radiated Emission 200MHz – 1GHz	4.84 dB	1.96
Radiated Emission 1GHz – 18GHz	4.35 dB	1.96

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5 Main Test Instruments

Name of Equipment	Manufacturer	Type/Model	Serial Number	Calibration Date	Expiration Time
Radiated Emission					
EMI Test Receiver	R&S	ESR	102389	2024-05-07	2025-05-06
Signal Analyzer	R&S	FSV40	101186	2024-05-07	2025-05-06
TRILOG Broadband Antenna	SCHWARZBECK	VULB 9163	1023	2023-07-14	2026-07-13
Horn Antenna	SCHWARZBECK	BBHA 9120D	430	2021-07-26	2024-07-25
Horn Antenna	R&S	HF907	102723	2021-07-24	2024-07-23
Software	R&S	EMC32	9.26.01	/	/

********END OF REPORT ********

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ANNEX A: The EUT Appearance

The EUT Appearance are submitted separately.

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ANNEX B: Test Setup Photos

The Test Setup Photos are submitted separately.

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ANNEX C: Product Change Description

The Product Change Description are submitted separately.

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