

Prüfbericht-Nr.: <i>Test report no.:</i>	CN247569 002	Auftrags-Nr.: <i>Order no.:</i>	170386300	Seite 1 von 20 <i>Page 1 of 20</i>
Kunden-Referenz-Nr.: <i>Client reference no.:</i>	--	Auftragsdatum: <i>Order date:</i>	2024-08-19	
Auftraggeber: <i>Client:</i>	Allstar Products Group 2 SKYLINE DRIVE HAWTHRONE NEW YORK #10532 USA			
Prüfgegenstand: <i>Test item:</i>	SWFT eScooter			
Bezeichnung / Typ-Nr.: <i>Identification / Type no.:</i>	SWFT-SD14-BLK, SWFT-XPRP-BLK			
Auftrags-Inhalt: <i>Order content:</i>	Test Report			
Prüfgrundlage: <i>Test specification:</i>	CFR47 FCC Part 15: Subpart C Section 15.225 CFR47 FCC Part 15: Subpart C Section 15.207 CFR47 FCC Part 15: Subpart C Section 15.209 RSS-210 Issue 11 June 25, 2024 RSS-Gen Issue 5 February 2021			
Wareneingangsdatum: <i>Date of sample receipt:</i>	2024-08-19	Please refer to photo documents		
Prüfmuster-Nr.: <i>Test sample no.:</i>	A003807316			
Prüfzeitraum: <i>Testing period:</i>	Refer to test report			
Ort der Prüfung: <i>Place of testing:</i>	TÜV Rheinland (Guangdong) Ltd.			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Guangdong) Ltd.			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von: <i>tested by:</i>	<u>Webb Luo</u>		genehmigt von: <i>authorized by:</i>	<u>Amy Wang</u>
Datum: <i>Date:</i>	2024-11-29	Signed by: Webb Luo	Ausstellungsdatum: <i>Issue date:</i>	2024-12-30 Signed by: Amy Wang
Stellung / Position:	Project Engineer		Stellung / Position:	Authorizer
Sonstiges / <i>Other:</i>	This report is for 13.56MHz evaluated. FCC ID:2APZ3SD, IC:4238A-SD (for model SWFT-SD14-BLK) FCC ID:2APZ3XPRP, IC:4238A-XPRP (for model SWFT-XPRP-BLK) HVIN: SWFT-SD14-BL, SWFT-XPRP-BLK, PMN: SWFT eScooter			
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>	Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>			
* Legende: P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet * Legend: P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested				
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Anmerkungen
Remarks

1	Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben. Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden. <i>The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system. Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.</i>
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3	Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben. Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt. <i>Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report.</i> <i>Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.</i>
4	Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnissen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezüglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019. <i>The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.</i>

Test Summary

5.1.1 ANTENNA REQUIREMENT

RESULT: Pass

5.1.2 THE FIELD STRENGTH OF EMISSION WITHIN THE BAND

RESULT: Pass

5.1.3 SPURIOUS EMISSION OUTSIDE BAND

RESULT: Pass

5.1.4 FREQUENCY TOLERANCE OF CARRIER SIGNAL

RESULT: Pass

5.1.5 99% BANDWIDTH

RESULT: Pass

5.1.6 20dB BANDWIDTH

RESULT: Pass

5.1.7 CONDUCTED EMISSIONS

RESULT: Not applicable

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1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Test Results of 13.56MHz SDR

Appendix B: Photographs of the Test Set-up.

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Guangdong) Ltd. EMC Laboratory

1&2/F, Building B, No.767 Tianyuan Road, Tianhe District, Guangzhou, Guangdong, China.

A2LA Cert. No.: 4302.01

FCC Accreditation Designation No.: 234821

ISED wireless device testing laboratory: 2932C

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Radio Spectrum Testing (SRD-Tonscend)				
Equipment	Manufacturer	Model	Serial No.	Cal. until
Spectrum Analyzer	FSP30	Rohde & Schwarz	100286	2024-12-03
Signal Generator	SMB100A	Rohde & Schwarz	115613	2025-03-04
Climatic Chamber	EL-04KA	GZ-ESPEC	6107116	2025-03-04
Attenuator	3.5TS2-6dB-26.5G	SHX	12042001	2025-02-28
Combiner/Divider	1515	Weinschel	PG325	2025-02-28
RF Control Unit	JS0806-2	Tonscend Technology	N/A	2025-03-22
Unwanted Emission Testing				
Equipment	Manufacturer	Model	Serial No.	Cal. until
EMI Test Receiver	ESW 8	Rohde & Schwarz	101312	2024-11-16
Trilog-Broadband Antenna	VULB9168 (30MHz-1GHz)	SCHWARZBECK MESSELEKTRONIK	684	2025-08-28
Double-Ridged	HF907	Rohde & Schwarz	100377	2026-03-07

Waveguide Horn Antenna	(1-18GHz)			
Pre-amplifier	TAP01018050	Tonscend Technology	AP23L8060327	2025-01-02
Band Reject Filter	BRM50702	Micro-Tronics	023	2026-07-11
Standard Gain Horn Antenna	3160-09 (18-26.5GHz)	EMCO	21642	2025-01-16
Pre-amplifier	AFS33-18002650-30-8P-44	MITEQ	1108282	2025-08-01
Loop Antenna	HFH2-Z2 (<30MHz)	Rohde & Schwarz	100111	2025-06-12
EMI Test Receiver	ESW 8	Rohde & Schwarz	101312	2024-11-16
EMC32 test software	R&S	EMC32(Ver.10.50.00)	N/A	N/A
Conducted Emission				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
Spectrum Analyzer	FSP30	Rohde & Schwarz	100286	2024-12-03
Power Meter	NRX	Rohde & Schwarz	100863	2025-03-04
Average Power Sensor	NRP6A	Rohde & Schwarz	106142	2025-03-04
RF Control Unit	JS0806-2	Tonscend Technology	N/A	2025-03-22
EMC32 test software	R&S	EMC32(Ver.10.50.00)	N/A	N/A

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table

Parameter	Uncertainty (k=2)
RF output power, conducted	± 1.15 dB
Occupied Channel Bandwidth	± 1.38 %
RF power density, conducted	± 1.15 dB
Unwanted Emissions, conducted	± 1.15 dB
All emissions, radiated(below 30MHz)	± 2.56 dB
All emissions, radiated(below 1GHz)	± 5.34 dB
All emissions, radiated(1~6 GHz)	± 4.56 dB
All emissions, radiated(6~18 GHz)	± 4.60 dB
Conducted Emission, (9kHz to 150kHz)/(150kHz to 30MHz)	± 2.16 dB / ± 1.98 dB

2.6 Location of Original Data

The original copies of all test data taken during actual testing were in this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

TÜV Rheinland (Guangdong) Ltd. EMC Laboratory. Test facility located at No. 110, 1/F., Building B, 1&2/F, Building B, No.767 Tianyuan Road, Tianhe District, Guangzhou, Guangdong, China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The EUTs SWFT-SD14-BLK and SWFT-XPRP-BLK are SWFT eScooter with wireless BT and NFC function.

They use the same circuit designs and the wireless modules except for the different appearance.

Therefore, all tests were performed on one representative model SWFT- SD14-BLK, and additional RSE tests were performed on one representative model SWFT-XPRP-BLK.

For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 2: Technical Specification of NFC

Technical Specification	Value
Kind of Equipment:	SWFT eScooter
Type Designation:	SWFT-SD14-BLK, SWFT-XPRP-BLK
Trademark:	
FCC ID:	2APZ3SD (for model SWFT-SD14-BLK) 2APZ3 XPRP (for model SWFT-XPRP-BLK)
IC:	4238A-SD (for model SWFT-SD14-BLK) 4238A-XPRP (for model SWFT-XPRP-BLK)
HVIN:	SWFT-SD14-BLK, SWFT-XPRP-BLK
PMN:	SWFT eScooter
Rating:	DC 36.0V, 7.8AH Li-ion intergral DC 42.0V, 1.5A (for charging mode)
Operating Voltage:	DC 36.0V, 7.8AH Li-ion
Extreme Temperature Range	-10°C to +55°C
Technical Specification of NFC	
Operating Frequency:	13.56MHz
Type of Modulation:	ASK
Channel Number:	1 channel
Antenna Type:	inductance coil Antenna
Antenna Gain:	0 dBi (Provided by the Client)

Note: All information is provided by customer confirmation.

3.3 Independent Operation Modes

The basic operation modes are:

- A. NFC mode
- B. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- | | |
|-----------------|---------------------------|
| - Block Diagram | - Schematics |
| - User Manual | - Model Difference Letter |

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

Radio Spectrum: The equipment under test (EUT) was configured at its highest power output to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All testing were performed according to the procedures in ANSI C63.10: 2013

According to clause 3.1, all tests were performed on model SWFT-XPRP-BLK in this report.

4.3 Special Accessories and Auxiliary Equipment

Table 3: List of Accessories and Auxiliary Equipment

Description	Manufacturer	Model	Remark
Notebook	Lenovo	T14	PF-35VTG1
switching power supply	Manufactured by: Guangzhou Ji Yin Power Electronics Co., Ltd.	JY-420150	Input: 100-240Vac, 50/60Hz, 2.0A Output: 42.0Vdc, 1.5A

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 30MHz)

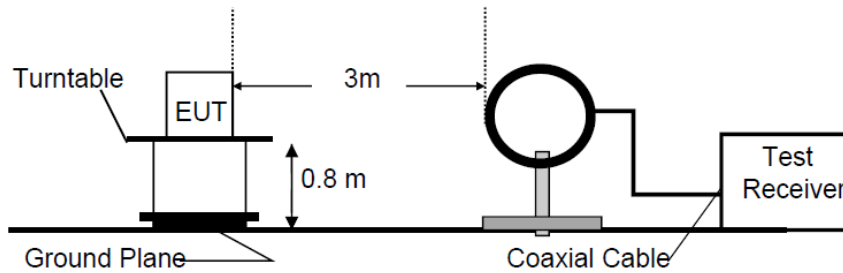


Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

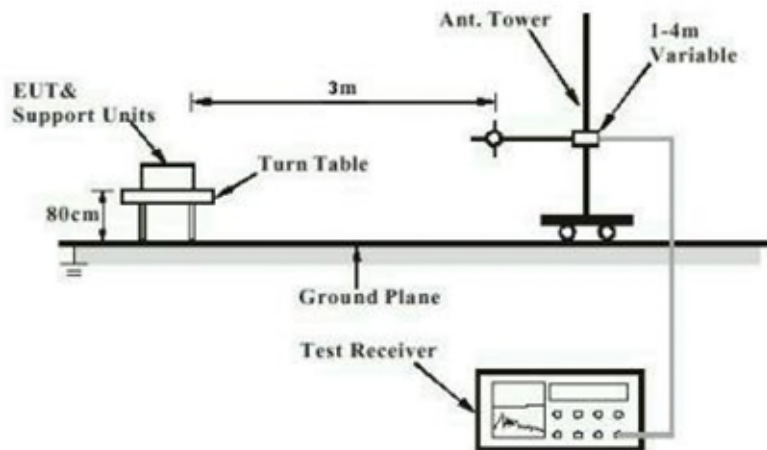


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

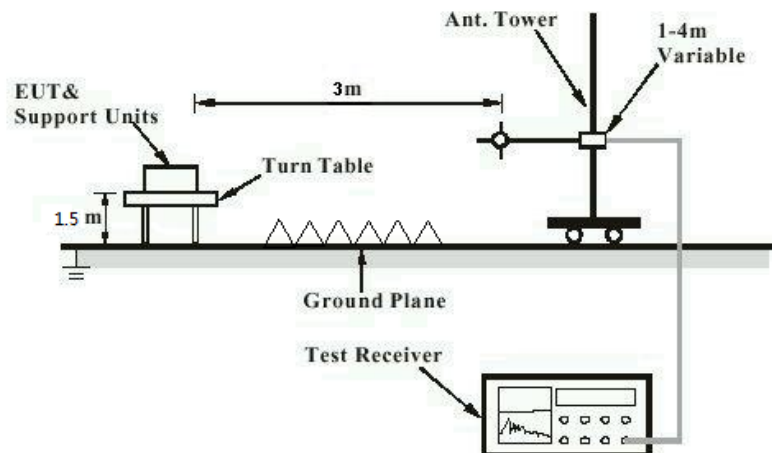
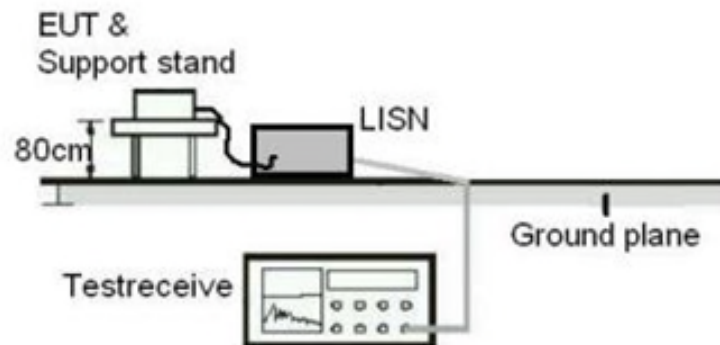


Diagram of Measurement Equipment Configuration for Mains Conduction Measurement



5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT:**Pass****Test Specification**

Test standard	:	Part 15.203
	:	RSS-Gen Clause 6.8
Limit	:	the use of antennas with directional gains that do not exceed 6 dBi

According to the manufacturer declared, the EUT has inductance coil Antenna, the directional gain of antenna is 0dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement. Therefore, the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

5.1.2 The field strength of Emission within the band**RESULT:****Pass****Test Specification**

Test standard : FCC Part 15.225 (a), (b), (c)
RSS-210 B6 (a) (i), (ii), (iii)
Basic standard : ANSI C63.10:2013
Limit : FCC Part 15.225 (a), (b), (c)
Kind of test site : Shielded Room

Test Setup

Date of testing : 2024-09-04 to 2024-09-30
Input voltage : Internal battery operated
Operation mode : A
Earthing : Not connected
Ambient temperature : Refer to Appendix 1
Relative humidity : Refer to Appendix 1
Atmospheric pressure : 101 kPa

Refer to Appendix 1 for details of test result.

Test result. (at 3m distance)

Test Mode	Test Polarization	Test data(dBuV/m)	Limit (dBuV/m)	Result
NFC transmitting	X	40.7	124.0	PASS
	Y	40.6		PASS
	Z	40.6		PASS

Refer to Appendix A for details of test result.

5.1.3 Spurious Emission outside band

RESULT:**Pass****Test Specification**

Test standard : FCC part 15.225 (d)
RSS-210 B6 (a) (iv)
Basic standard : ANSI C63.10: 2013
Limit : FCC part 15.209(a)
Kind of test site : 3m Semi-anechoic Chamber

Test Setup

Date of testing : 2024-09-04 to 2024-09-30
Input voltage : Internal battery operated
Operation mode : A
Earthing : Not connected
Ambient temperature : Refer to Appendix 1
Relative humidity : Refer to Appendix 1
Atmospheric pressure : 101 kPa

Refer to Appendix A for details of test result.

5.1.4 Frequency tolerance of carrier signal

RESULT:
Pass
Test Specification

Test standard : FCC part 15.225 (e)
RSS-210 B6 (b)
Basic standard : ANSI C63.10: 2013
Limit : $\pm 0.01\%$
Kind of test site : 3m Semi-Anechoic Chamber

Test Setup

Date of testing : 2024-09-04 to 2024-09-30
Input voltage : Refer to below table 3
Operation mode : A
Earthing : Not connected
Ambient temperature : 25°C
Relative humidity : 54 %
Atmospheric pressure : 101 kPa

Refer to following test plots for details of test result.

Table 4: Test result of frequency tolerance of voltage variation

Test conditions		Frequency (MHz)
		13.56
T _{nom} (25 °C)	V _{min} (AC 102 V)	13.559822
T _{nom} (25 °C)	V _{nom} (AC 120V)	13.559823
T _{nom} (25 °C)	V _{max} (AC 138V)	13.559821
T _{min} (-10 °C)	V _{nom} (AC 120V)	13.559856
T _{min} (0 °C)	V _{nom} (AC 120V)	13.559837
T _{min} (10 °C)	V _{nom} (AC 120V)	13.559839
T _{min} (20 °C)	V _{nom} (AC 120V)	13.559845
T _{min} (30 °C)	V _{nom} (AC 120V)	13.559864
T _{min} (40 °C)	V _{nom} (AC 120V)	13.559838
T _{min} (55 °C)	V _{nom} (AC 120V)	13.559812
Max. frequency error (kHz)		0.188 (limit $\pm 135.6\text{KHz}$)

5.1.5 99% Bandwidth

RESULT: Pass

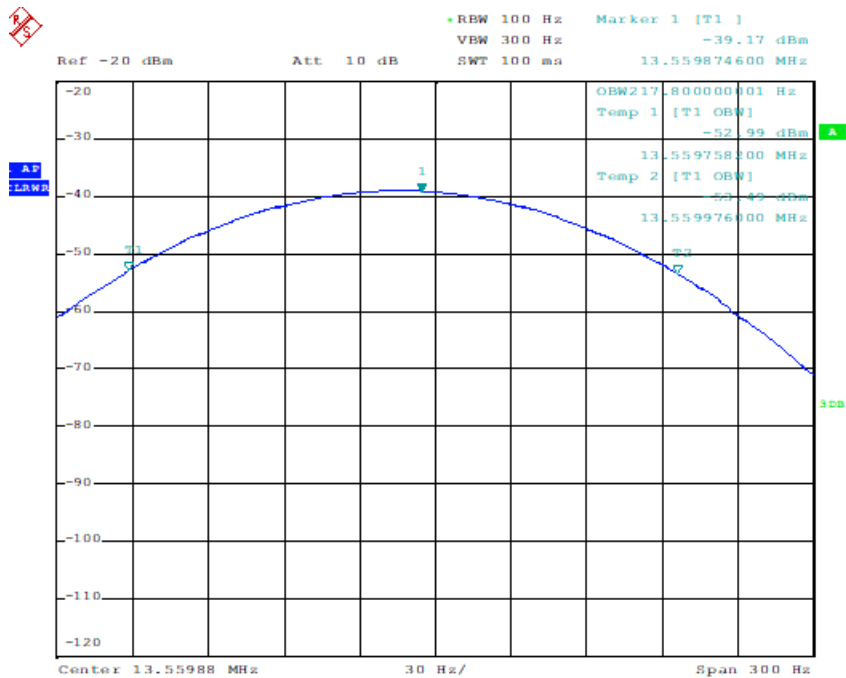
Test Specification

Test standard : RSS-Gen Clause 6.7
Basic standard : ANSI C63.10: 2013
Kind of test site : Shielded Room

Test Setup

Date of testing : 2024-09-04 to 2024-09-30
Input voltage : Internal battery operated
Operation mode : A
Ambient temperature : Not connected
Ambient temperature : 25°C
Relative humidity : 54 %
Atmospheric pressure : 101 kPa

For details refer to following test result.



5.1.6 20dB Bandwidth

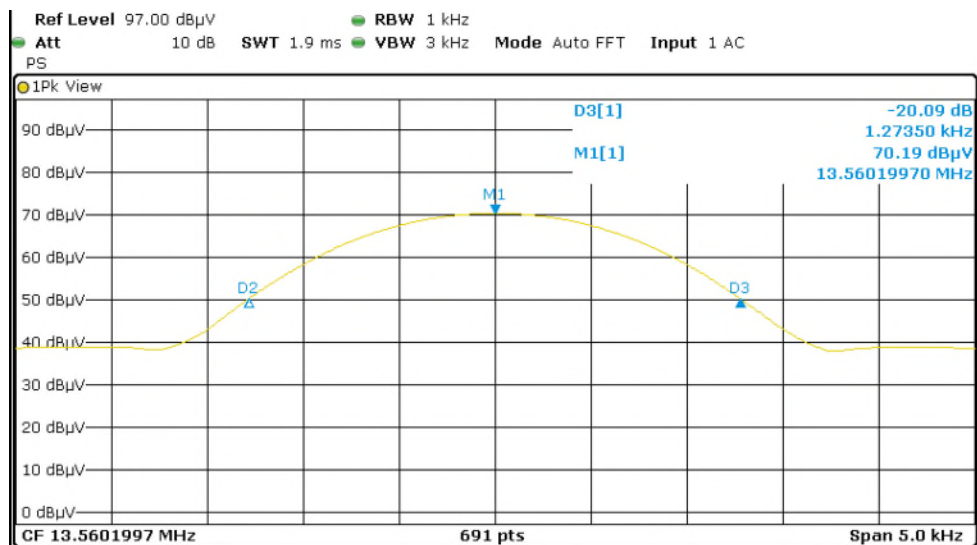
RESULT:
Pass
Test Specification

Test standard : FCC part 15.215
 Basic standard : ANSI C63.10: 2013
 Kind of test site : Shielded Room

Test Setup

Date of testing : 2024-09-04 to 2024-09-30
 Input voltage : Internal battery operated
 Operation mode : A
 Ambient temperature : Not connected
 Relative humidity : 23 °C
 Atmospheric pressure : 101 kPa

For details refer to following test result.



5.1.7 Conducted Emissions

RESULT:**Not applicable****Test Specification**

Test standard	: FCC Part 15.207 RSS-Gen
Basic standard	: ANSI C63.4: 2014
Frequency range	: 150 kHz – 30 MHz
Kind of test site	: Shielded Room
Limit	: FCC Part 15.207 (a) Table 4 of RSS-Gen

Note: NFC function will be disabled when product is in charging.

6 Photographs of the Test Set-Up

For photographs of the test set-up, refer to the appendix B.

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Appendix A: Test Results of 13.56MHz

APPENDIX A: TEST RESULTS OF 13.56MHZ	1
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APPENDIX A.2: TEST RESULTS OF RADIATED SPURIOUS EMISSIONS	14
9KHz - 30MHz	14
30MHz - 1000MHz	26

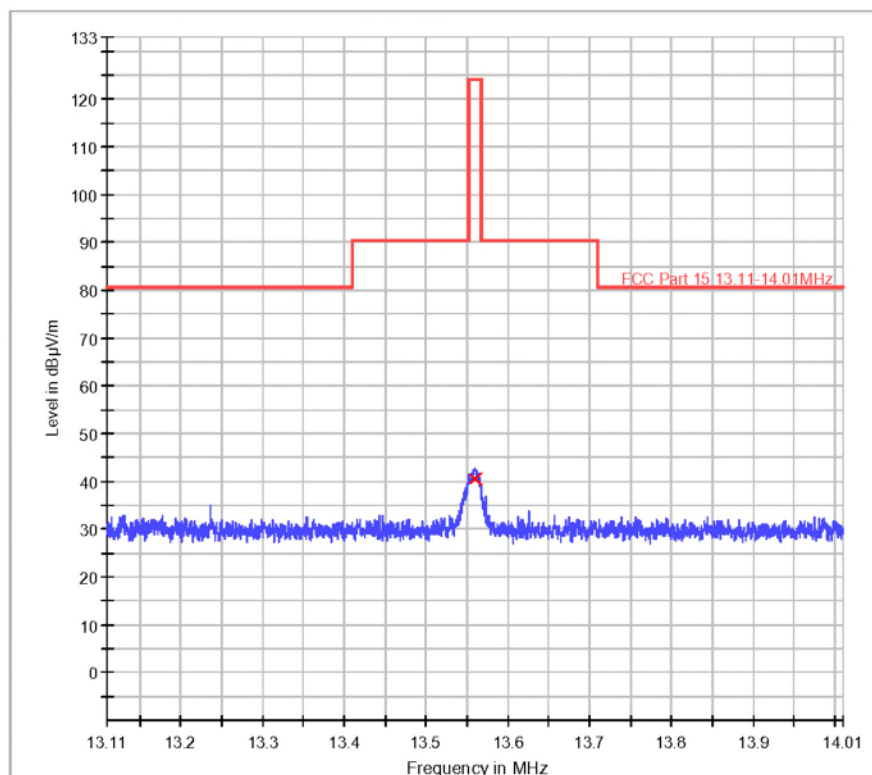
Appendix A.1: The field strength of Emission within the band

EMC Test Record (Emission)

Common Information

Manufacturer:	
Test Item:	SWFT eScooter
Identification:	SWFT-SD14-BLK
Test Standard:	FCC Part 15C
Test Detail:	Radiated Emission
Operation Mode:	A
Climate Condition:	22 °C, 53 %, 101 kPa
Test Voltage/ Freq:	
Receipt No:	170386300
Report No:	/
Result:	Pass
Comment:	Test distance is 3m; X

Subrange 1	
Frequency range:	150K-30MHz
Receiver:	ESCI 3
Transducer:	HFH2-Z2



Tested by: *Jim Chen*
20240913

Reviewed by: *Jacky Chen*
20240930

TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

Limit and Margin

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBµV/m)
13.560000	40.7	1000.0	9.000	X	20.5	83.4	124.0

Tested by:  20240913
Reviewed by:  20240930

TUV Rheinland (Guangdong) Ltd.

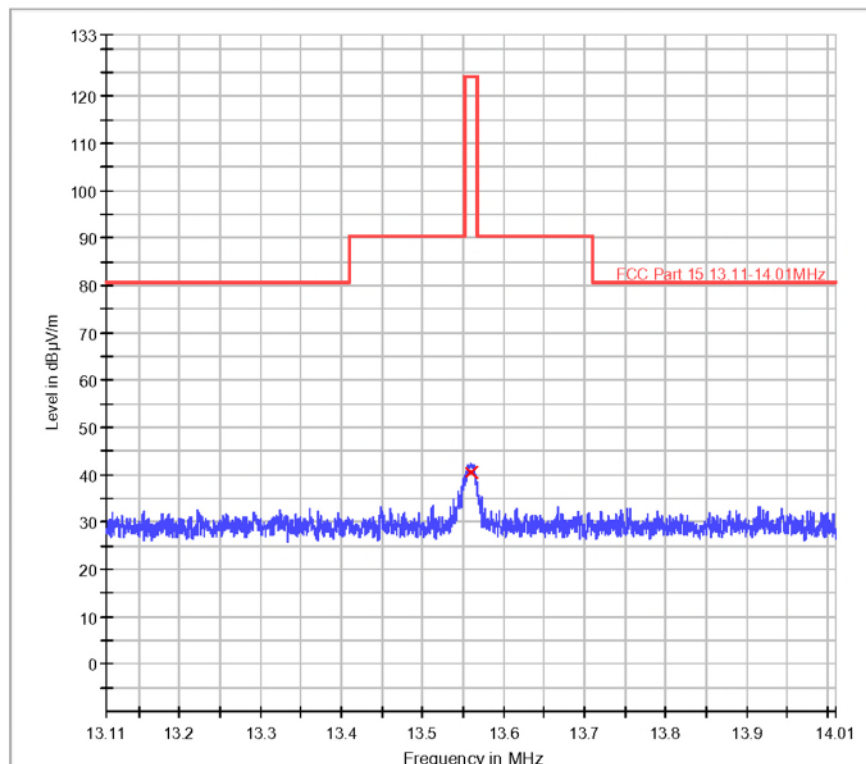
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer:	
Test Item:	Scooter
Identification:	SWFT eScooter
Test Standard:	FCC Part 15C
Test Detail:	Radiated Emission
Operation Mode:	A
Climate Condition:	22 °C, 53 %, 101 kPa
Test Voltage/ Freq:	
Receipt No:	170386300
Report No:	/
Result:	Pass
Comment:	Test distance is 3m; Y

Subrange 1	
Frequency range:	150K-30MHz
Receiver:	ESCI 3
Transducer:	HFH2-Z2



Tested by: 
20240913

Reviewed by: 
20240930

TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

Limit and Margin

Frequency (MHz)	QuasiPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBμV/m)
13.560000	40.6	1000.0	9.000	Y	20.5	83.4	124.0

Tested by:  20240913
Reviewed by:  20240930

TUV Rheinland (Guangdong) Ltd.

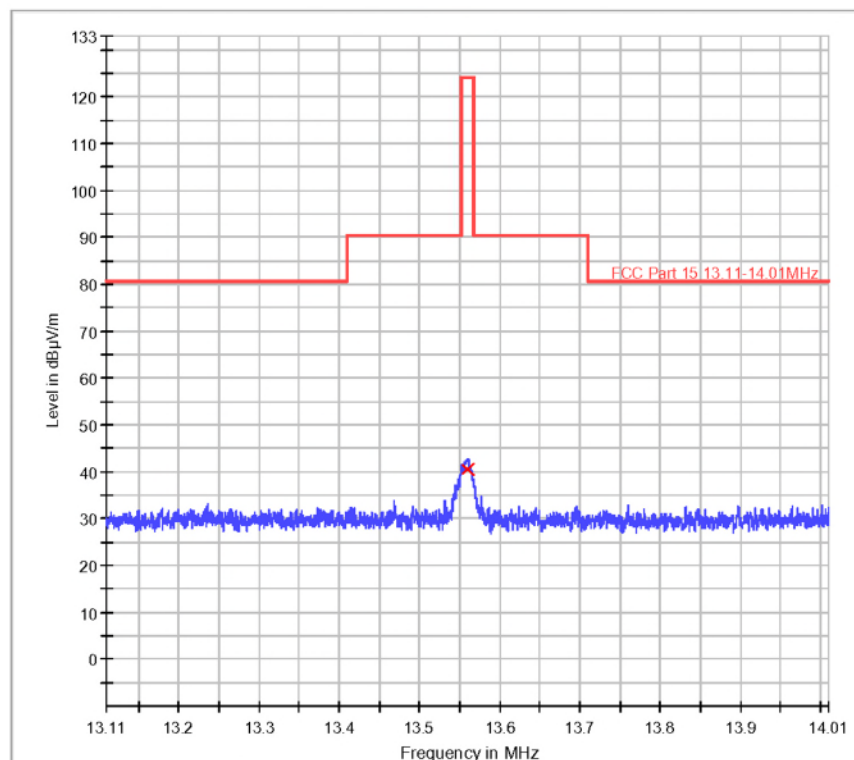
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer:	
Test Item:	SWFT eScooter
Identification:	SWFT-SD14-BLK
Test Standard:	FCC Part 15C
Test Detail:	Radiated Emission
Operation Mode:	A
Climate Condition:	22 °C, 53 %, 101 kPa
Test Voltage/ Freq:	
Receipt No:	170386300
Report No:	/
Result:	Pass
Comment:	Test distance is 3m; Z

Subrange 1	
Frequency range:	150K-30MHz
Receiver:	ESCI 3
Transducer:	HFH2-Z2



Tested by:

Jim Chen
20240913

Reviewed by:

Jacky Chen
20240930

TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

Limit and Margin

Frequency (MHz)	QuasiPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBμV/m)
13.560000	40.6	1000.0	9.000	Z	20.5	83.4	124.0

Tested by:

JmChen

20240913

Reviewed by:

Jacky Chen

20240930

TUV Rheinland (Guangdong) Ltd.

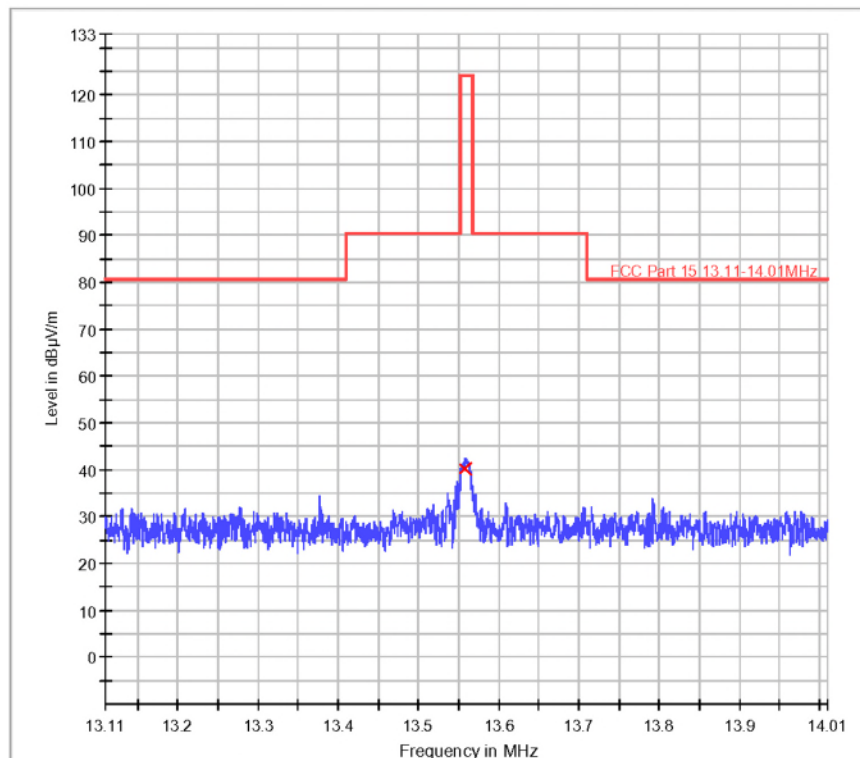
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer:	
Test Item:	SWFT eScooter
Identification:	SWFT-XPRP-BLK
Test Standard:	FCC Part 15C
Test Detail:	Radiated Emission
Operation Mode:	A
Climate Condition:	22 °C, 53 %, 101 kPa
Test Voltage/ Freq:	
Receipt No:	170386300
Report No:	/
Result:	Pass
Comment:	Test distance is 3m; X

Subrange 1	
Frequency range:	150K-30MHz
Receiver:	ESCI 3
Transducer:	HFH2-Z2



Tested by: 
20240913

Reviewed by: 
20240930

TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

Limit and Margin

Frequency (MHz)	QuasiPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBμV/m)
13.559000	40.2	1000.0	9.000	X	20.5	83.8	124.0

Tested by:  Reviewed by: 
20240913 20240930

TUV Rheinland (Guangdong) Ltd.

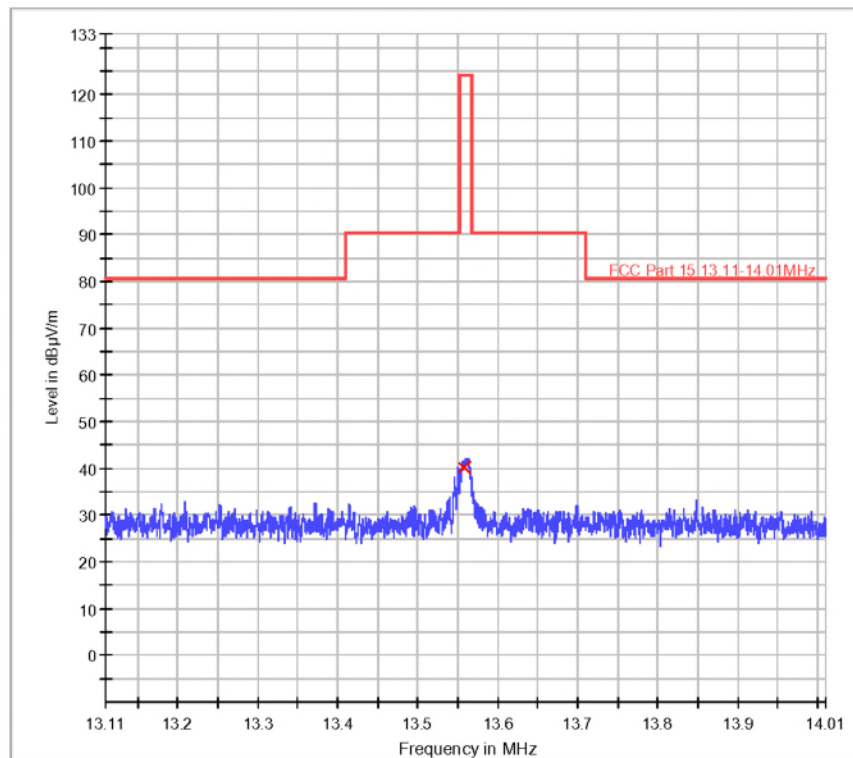
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer:	
Test Item:	SWFT eScooter
Identification:	SWFT-XPRP-BLK
Test Standard:	FCC Part 15C
Test Detail:	Radiated Emission
Operation Mode:	A
Climate Condition:	22 °C, 53 %, 101 kPa
Test Voltage/ Freq:	
Receipt No:	170386300
Report No:	/
Result:	Pass
Comment:	Test distance is 3m;Y

Subrange 1	
Frequency range:	150K-30MHz
Receiver:	ESCI 3
Transducer:	HFH2-Z2



Tested by:

20240913

Reviewed by:

20240930

TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

Limit and Margin

Frequency (MHz)	QuasiPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBμV/m)
13.559000	40.2	1000.0	9.000	Y	20.5	83.8	124.0

Tested by:  20240913
Reviewed by:  20240930

TUV Rheinland (Guangdong) Ltd.

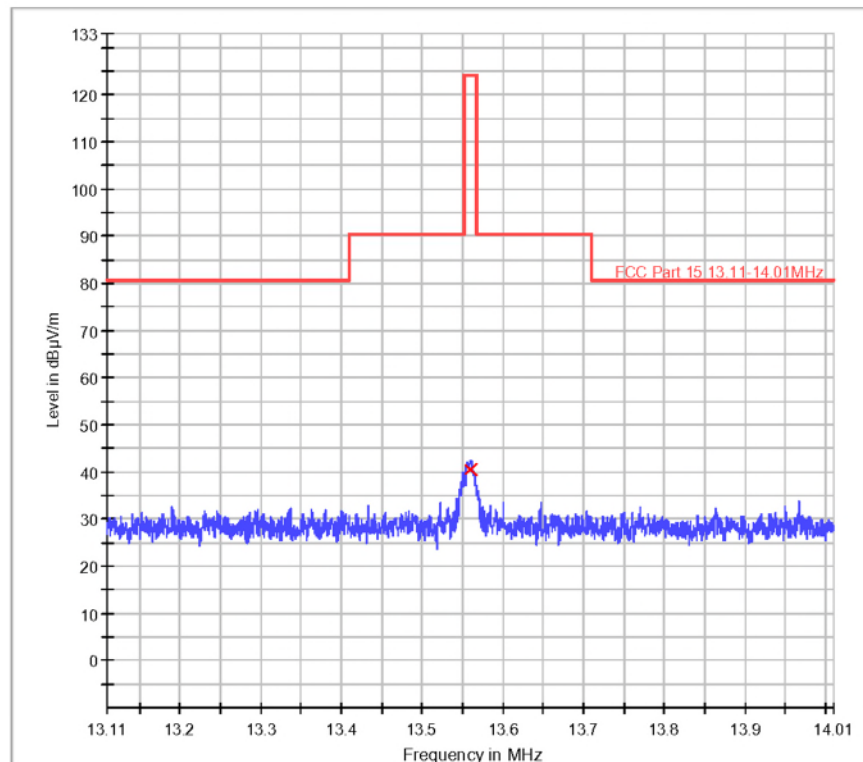
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer:	
Test Item:	SWFT eScooter
Identification:	SWFT-XPRP-BLK
Test Standard:	FCC Part 15C
Test Detail:	Radiated Emission
Operation Mode:	A
Climate Condition:	22 °C, 53 %, 101 kPa
Test Voltage/ Freq:	
Receipt No:	170386300
Report No:	/
Result:	Pass
Comment:	Test distance is 3m; Z

Subrange 1	
Frequency range:	150K-30MHz
Receiver:	ESCI 3
Transducer:	HFH2-Z2



Tested by: *Jim Chen*
20240913

Reviewed by: *Jacky Chen*
20240930

TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

Limit and Margin

Frequency (MHz)	QuasiPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBμV/m)
13.560000	40.6	1000.0	9.000	Z	20.5	83.4	124.0

Tested by:  20240913
Reviewed by:  20240930

Appendix A.2: Test Results of Radiated Spurious Emissions

Note:

- 1) This testing was carried out on different modulations, but only the worst case was presented in this report.
- 2) Testing was carried out within frequency range 9kHz to the tenth harmonics, so only the radiated spurious emissions from 9KHz to 30MHz were reported.

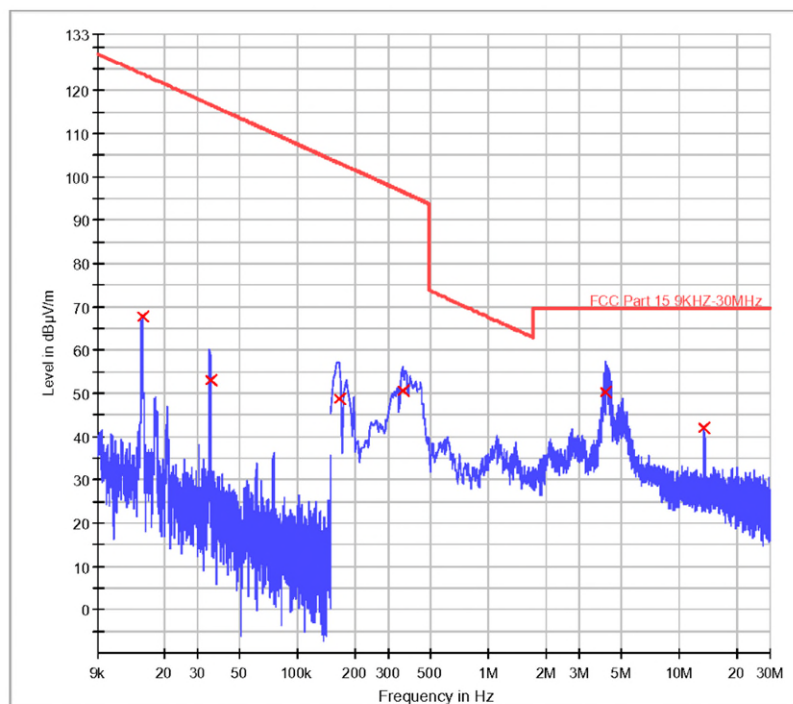
9KHz - 30MHz

EMC Test Record (Emission)

Common Information

Manufacturer:	
Test Item:	SWFT eScooter
Identification:	SWFT-XPRP-BLK
Test Standard:	FCC Part 15C
Test Detail:	Radiated Emission
Operation Mode:	A
Climate Condition:	22 °C, 53 %, 101 kPa
Test Voltage/ Freq:	
Receipt No:	170386300
Report No:	/
Result:	Pass
Comment:	Test distance is 3m; X

Subrange 1	
Frequency range:	9K-30MHz
Receiver:	ESCI 3
Transducer:	HFH2-Z2



Tested by: *Jm Chen*
20240913

Reviewed by: *Jody Chen*
20240930

TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

Limit and Margin

Frequency (MHz)	QuasiPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBμV/m)
0.015400	67.7	1000.0	0.200	X	21.2	56.1	123.8
0.034800	53.1	1000.0	9.000	X	20.8	63.7	116.8
0.165000	48.9	1000.0	9.000	X	20.8	54.3	103.2
0.355000	50.7	1000.0	9.000	X	20.8	45.9	96.6
4.124000	50.2	1000.0	9.000	X	20.8	19.3	69.5
13.560000	42.0	1000.0	9.000	X	20.5	27.5	69.5

Tested by:  20240913
Reviewed by:  20240930

TUV Rheinland (Guangdong) Ltd.

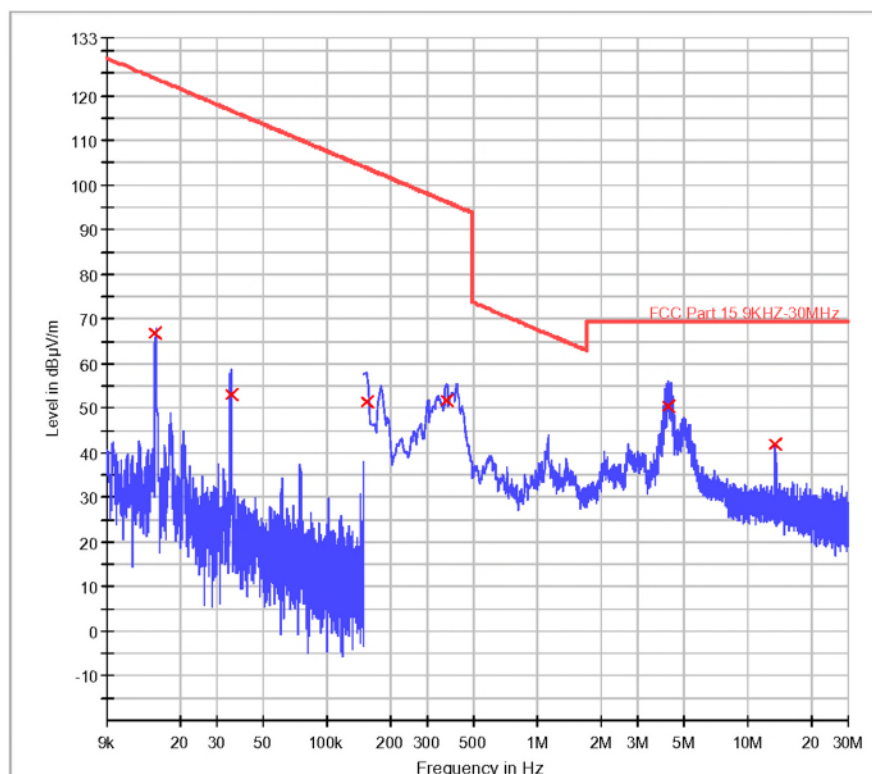
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer:	
Test Item:	SWFT eScooter
Identification:	SWFT-XPRP-BLK
Test Standard:	FCC Part 15C
Test Detail:	Radiated Emission
Operation Mode:	A
Climate Condition:	22 °C, 53 %, 101 kPa
Test Voltage/ Freq:	
Receipt No:	170386300
Report No:	/
Result:	Pass
Comment:	Test distance is 3m; Y

Subrange 1	
Frequency range:	9K-30MHz
Receiver:	ESCI 3
Transducer:	HFH2-Z2



Tested by: *Jim Chen*
20240913

Reviewed by: *Jacky Chen*
20240930

TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

Limit and Margin

Frequency (MHz)	QuasiPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBμV/m)
0.015300	66.8	1000.0	0.200	Y	21.2	57.1	123.9
0.034800	53.1	1000.0	9.000	Y	20.8	63.7	116.8
0.154000	51.4	1000.0	9.000	Y	20.8	52.4	103.8
0.370000	51.6	1000.0	9.000	Y	20.8	44.6	96.2
4.165000	50.5	1000.0	9.000	Y	20.8	19.0	69.5
13.560000	42.0	1000.0	9.000	Y	20.5	27.5	69.5

Tested by:  20240913
Reviewed by:  20240930

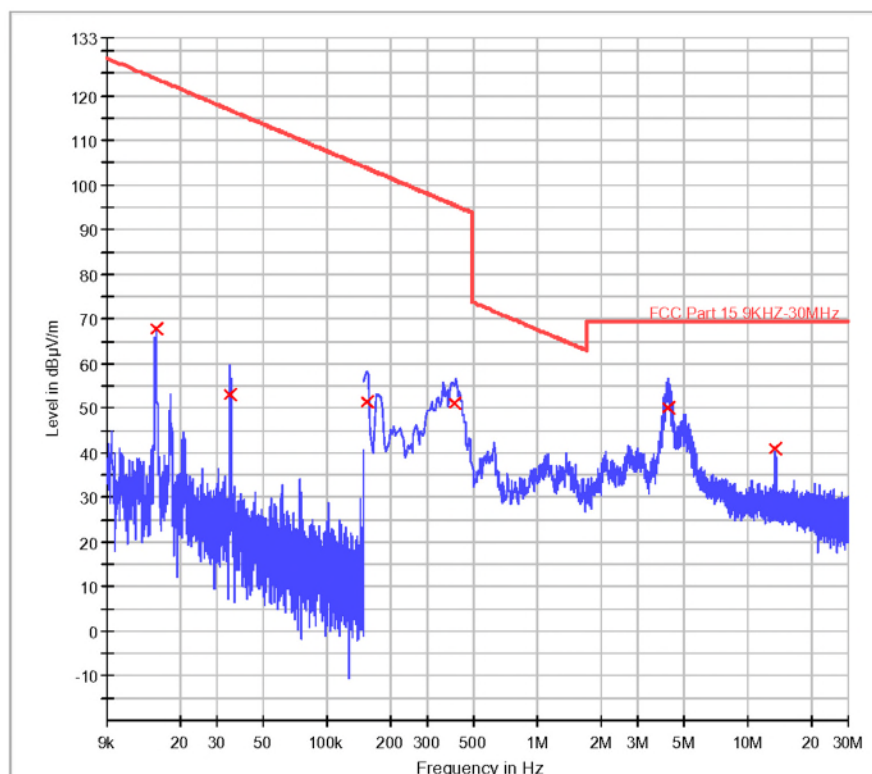
TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer:	
Test Item:	SWFT eScooter
Identification:	SWFT-XPRP-BLK
Test Standard:	FCC Part 15C
Test Detail:	Radiated Emission
Operation Mode:	A
Climate Condition:	22 °C, 53 %, 101 kPa
Test Voltage/ Freq:	
Receipt No:	170386300
Report No:	/
Result:	Pass
Comment:	Test distance is 3m; Z
Subrange 1	
Frequency range:	9K-30MHz
Receiver:	ESCI 3
Transducer:	HFH2-Z2



Tested by: *Jim Chen*
20240913

Reviewed by: *Jacky Chen*
20240930

TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

Limit and Margin

Frequency (MHz)	QuasiPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBμV/m)
0.015400	67.9	1000.0	0.200	Z	21.2	56.0	123.8
0.034700	53.1	1000.0	9.000	Z	20.8	63.7	116.8
0.154000	51.4	1000.0	9.000	Z	20.8	52.4	103.8
0.407000	51.2	1000.0	9.000	Z	20.8	44.2	95.4
4.202000	50.3	1000.0	9.000	Z	20.8	19.2	69.5
13.560000	41.0	1000.0	9.000	Z	20.5	28.5	69.5

Tested by:  20240913
Reviewed by:  20240930

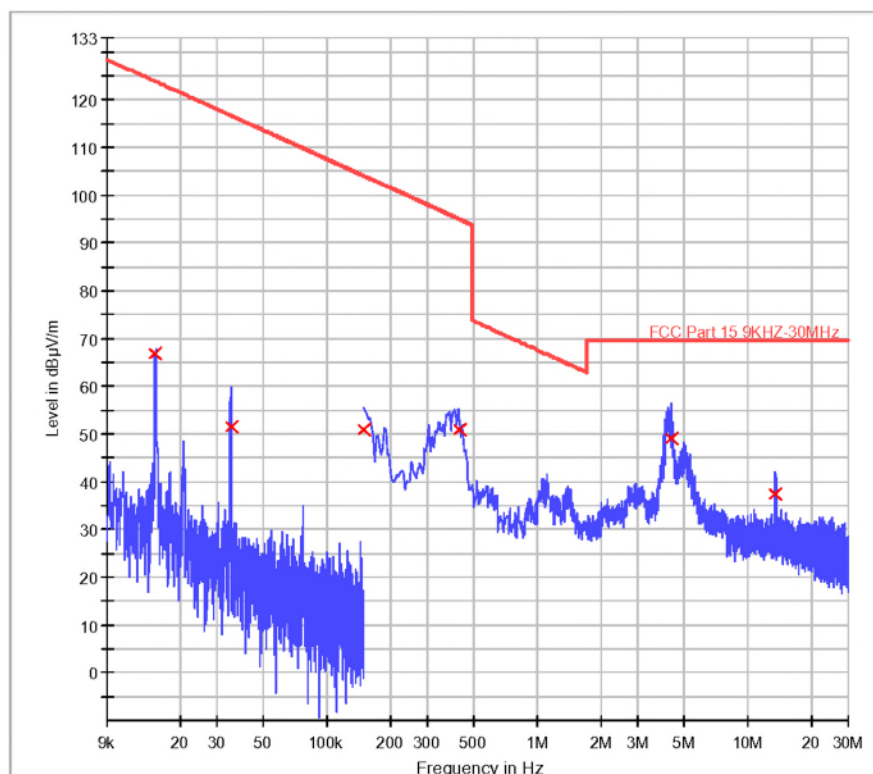
TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer:	
Test Item:	SWFT eScooter
Identification:	SWFT-SD14-BLK
Test Standard:	FCC Part 15C
Test Detail:	Radiated Emission
Operation Mode:	A
Climate Condition:	22 °C, 53 %, 101 kPa
Test Voltage/ Freq:	DC 12V
Receipt No:	170386300
Report No:	/
Result:	Pass
Comment:	Test distance is 3m; X
Subrange 1	
Frequency range:	9K-30MHz
Receiver:	ESCI 3
Transducer:	HFH2-Z2



Tested by: *Jim Chen*
20240913

Reviewed by: *Jacky Chen*
20240930

TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

Limit and Margin

Frequency (MHz)	QuasiPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBμV/m)
0.015300	67.0	1000.0	0.200	X	21.2	56.9	123.9
0.034800	51.6	1000.0	9.000	X	20.8	65.2	116.8
0.150000	51.0	1000.0	9.000	X	20.8	53.1	104.1
0.422000	50.9	1000.0	9.000	X	20.8	44.2	95.1
4.336000	49.1	1000.0	9.000	X	20.8	20.4	69.5
13.564000	37.3	1000.0	9.000	X	20.5	32.2	69.5

Tested by:  20240913
Reviewed by:  20240930

TUV Rheinland (Guangdong) Ltd.

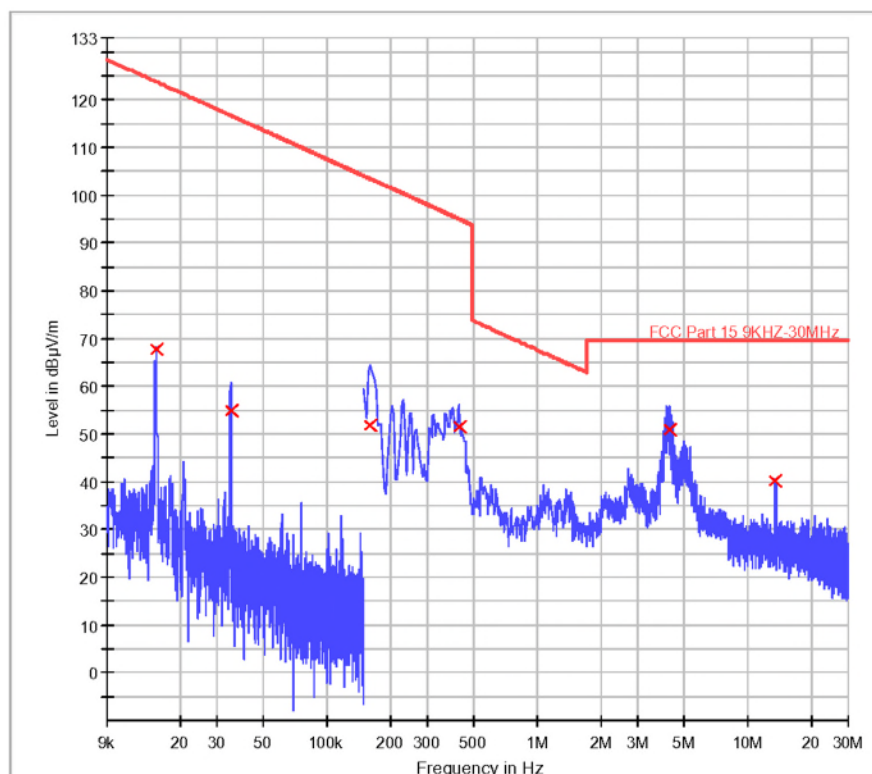
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer:	
Test Item:	SWFT eScooter
Identification:	SWFT-SD14-BLK
Test Standard:	FCC Part 15C
Test Detail:	Radiated Emission
Operation Mode:	A
Climate Condition:	22 °C, 53 %, 101 kPa
Test Voltage/ Freq:	DC 12V
Receipt No:	170386300
Report No:	/
Result:	Pass
Comment:	Test distance is 3m; Y

Subrange 1	
Frequency range:	9K-30MHz
Receiver:	ESCI 3
Transducer:	HFH2-Z2



Tested by: *Jim Chen*
20240913

Reviewed by: *Jacky Chen*
20240930

TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

Limit and Margin

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBµV/m)
0.015400	67.8	1000.0	0.200	Y	21.2	56.0	123.8
0.034800	54.8	1000.0	9.000	Y	20.8	62.0	116.8
0.161000	51.9	1000.0	9.000	Y	20.8	51.6	103.5
0.422000	51.7	1000.0	9.000	Y	20.8	43.4	95.1
4.239000	51.0	1000.0	9.000	Y	20.8	18.5	69.5
13.560000	40.1	1000.0	9.000	Y	20.5	29.4	69.5

Tested by:  20240913
Reviewed by:  20240930

TUV Rheinland (Guangdong) Ltd.

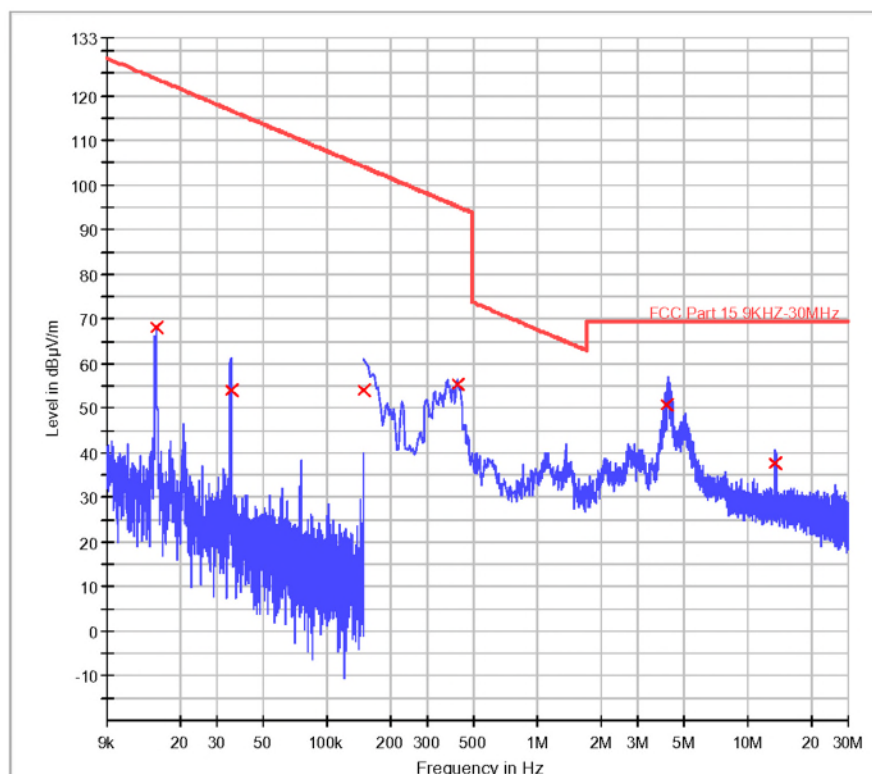
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer:	
Test Item:	SWFT eScooter
Identification:	SWFT-SD14-BLK
Test Standard:	FCC Part 15C
Test Detail:	Radiated Emission
Operation Mode:	A
Climate Condition:	22 °C, 53 %, 101 kPa
Test Voltage/ Freq:	DC 12V
Receipt No:	170386300
Report No:	/
Result:	Pass
Comment:	Test distance is 3m; Z

Subrange 1	
Frequency range:	9K-30MHz
Receiver:	ESCI 3
Transducer:	HFH2-Z2



Tested by: *Jim Chen*
20240913

Reviewed by: *Jacky Chen*
20240930

TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

Limit and Margin

Frequency (MHz)	QuasiPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBμV/m)
0.015400	68.0	1000.0	0.200	Z	21.2	55.9	123.8
0.034800	54.0	1000.0	9.000	Z	20.8	62.7	116.8
0.150000	54.2	1000.0	9.000	Z	20.8	49.9	104.1
0.415000	55.2	1000.0	9.000	Z	20.8	40.0	95.2
4.142000	50.7	1000.0	9.000	Z	20.8	18.8	69.5
13.556000	37.8	1000.0	9.000	Z	20.5	31.8	69.5

Tested by:  20240913
Reviewed by:  20240930

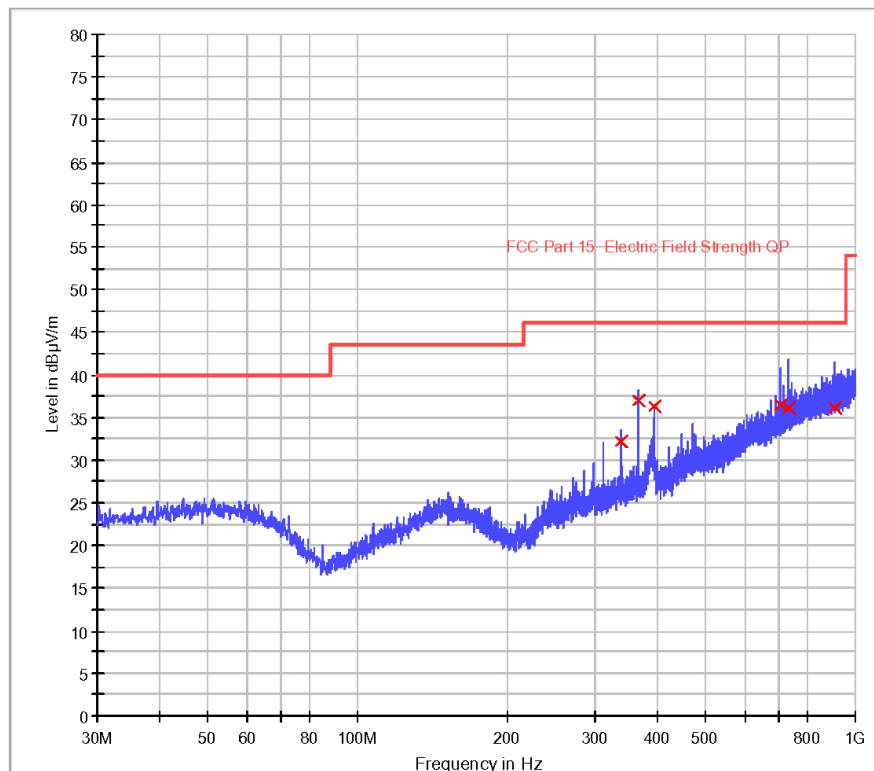
30MHz - 1000MHz

EMC Test Record (Emission)

Common Information

Manufacturer:	
Test Item:	SWFT eScooter
Identification:	SWFT-XPRP-BLK
Test Standard:	FCC Part 15C
Test Detail:	Radiated Emission
Operation Mode:	A
Climate Condition:	22 °C, 53 %, 101 kPa
Test Voltage/ Freq:	
Receipt No:	170386300
Report No:	/
Result:	Pass
Comment:	Test distance is 3m; Horizontal

Subrange 1	
Frequency range:	30-1000MHz
Receiver:	ESCI 3
Transducer:	VULB9168



Tested by:

20240914

Reviewed by:

20240930

TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

Limit and Margin

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBµV/m)
338.945000	32.2	1000.0	120.000	H	23.1	13.8	46.0
366.105000	36.9	1000.0	120.000	H	23.8	9.1	46.0
393.265000	36.4	1000.0	120.000	H	24.5	9.6	46.0
705.120000	36.5	1000.0	120.000	H	31.5	9.5	46.0
732.280000	36.2	1000.0	120.000	H	32.4	9.8	46.0
908.577500	36.2	1000.0	120.000	H	34.5	9.8	46.0

Tested by: 
20240914

Reviewed by: 
20240930

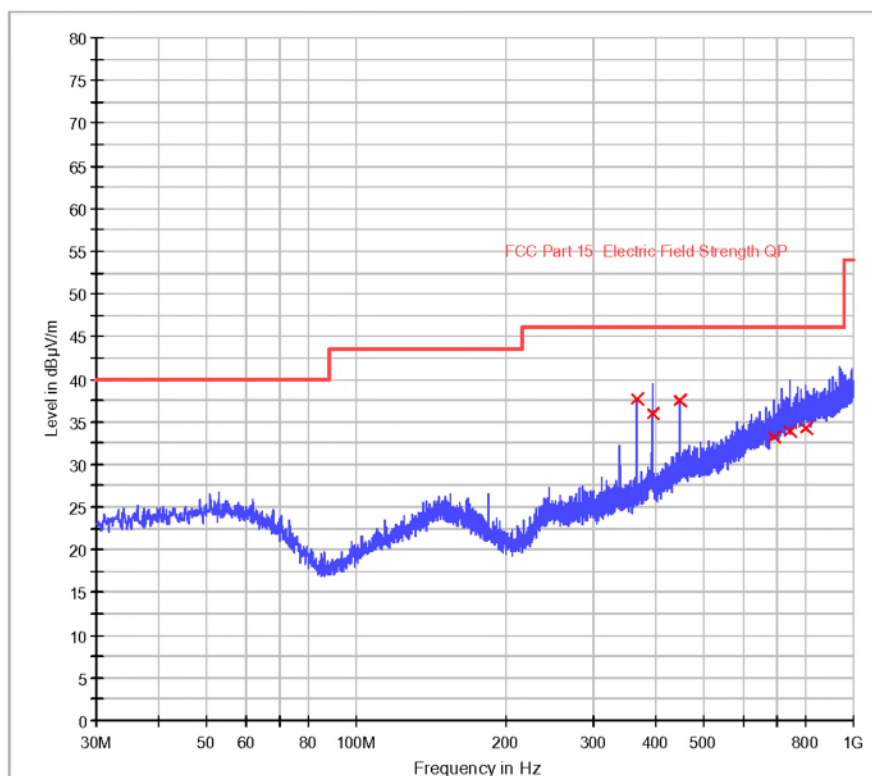
TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer:	
Test Item:	SWFT eScooter
Identification:	SWFT-XPRP-BLK
Test Standard:	FCC Part 15C
Test Detail:	Radiated Emission
Operation Mode:	A
Climate Condition:	22 °C, 53 %, 101 kPa
Test Voltage/ Freq:	
Receipt No:	170386300
Report No:	/
Result:	Pass
Comment:	Test distance is 3m; Vertical
Subrange 1	
Frequency range:	30-1000MHz
Receiver:	ESCI 3
Transducer:	VULB9168



Tested by: *Jim Chen*
20240914

Reviewed by: *Jacky Chen*
20240930

TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

Limit and Margin

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBµV/m)
366.120000	37.7	1000.0	120.000	V	23.8	8.3	46.0
393.280000	35.9	1000.0	120.000	V	24.5	10.1	46.0
447.480000	37.5	1000.0	120.000	V	26.5	8.5	46.0
691.680000	33.2	1000.0	120.000	V	31.4	12.8	46.0
745.840000	34.0	1000.0	120.000	V	32.6	12.1	46.0
799.200000	34.2	1000.0	120.000	V	33.5	11.8	46.0

Tested by: 
20240914

Reviewed by: 
20240930

TUV Rheinland (Guangdong) Ltd.

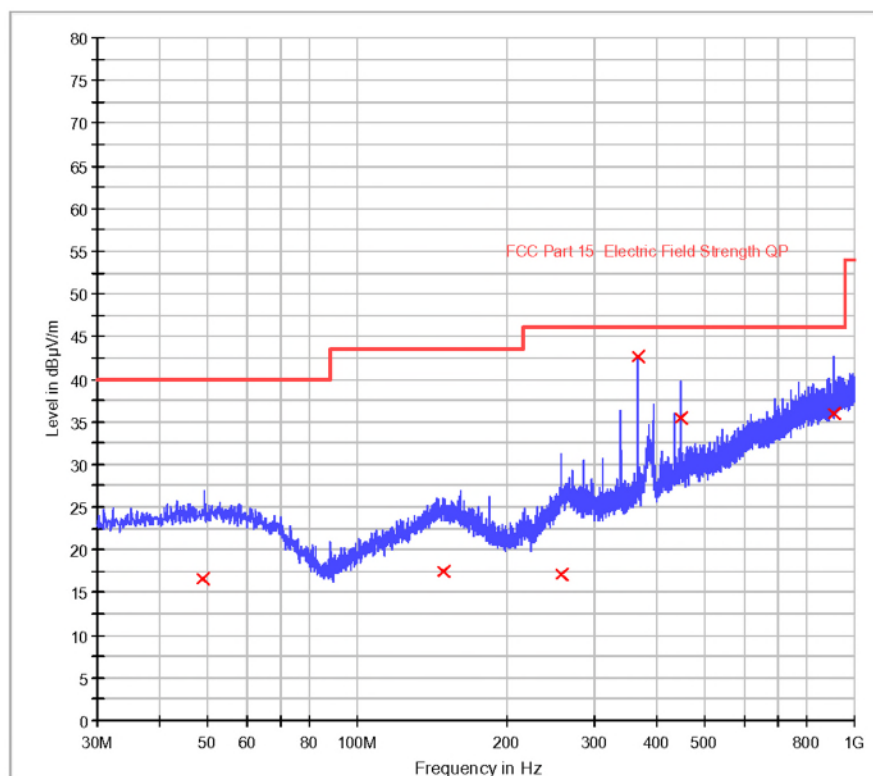
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer:	
Test Item:	SWFT eScooter
Identification:	SWFT-SD14-BLK
Test Standard:	FCC Part 15C
Test Detail:	Radiated Emission
Operation Mode:	A
Climate Condition:	22 °C, 53 %, 101 kPa
Test Voltage/ Freq:	DC 12V
Receipt No:	170386300
Report No:	/
Result:	Pass
Comment:	Test distance is 3m; Horizontal

Subrange 1	
Frequency range:	30-1000MHz
Receiver:	ESCI 3
Transducer:	VULB9168



Tested by: *Jim Chen*
20240914

Reviewed by: *Jacky Chen*
20240930

TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

Limit and Margin

Frequency (MHz)	QuasiPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBμV/m)
48.800000	16.6	1000.0	120.000	H	20.7	23.4	40.0
148.960000	17.5	1000.0	120.000	H	21.3	26.0	43.5
257.720000	17.1	1000.0	120.000	H	20.3	28.9	46.0
366.120000	42.7	1000.0	120.000	H	23.8	3.3	46.0
447.480000	35.5	1000.0	120.000	H	26.5	10.6	46.0
908.560000	36.0	1000.0	120.000	H	34.5	10.0	46.0

Tested by: 
20240914

Reviewed by: 
20240930

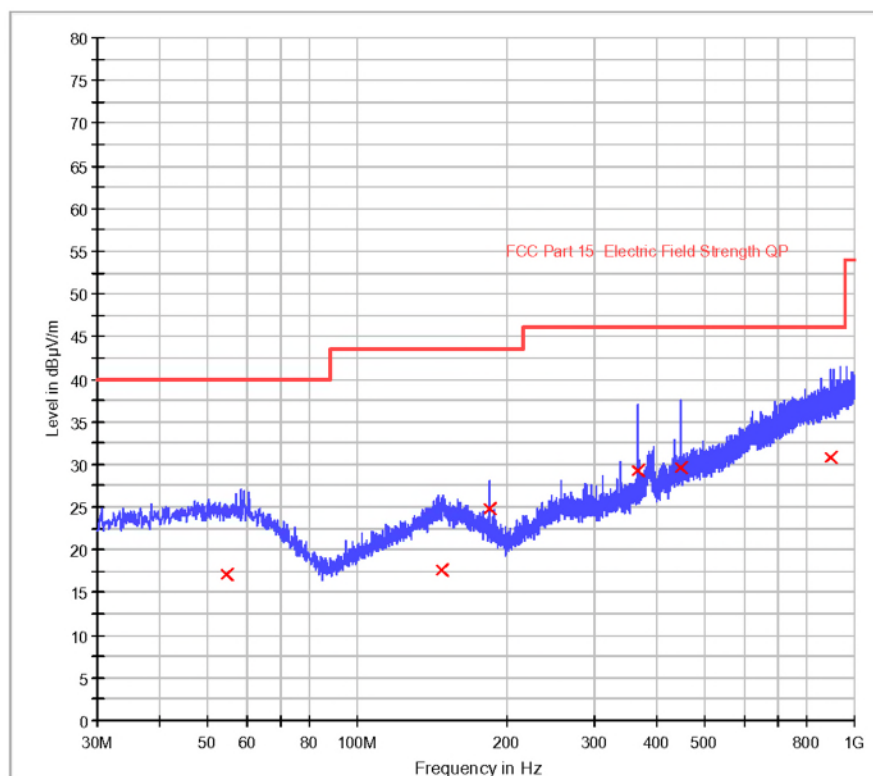
TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer:	
Test Item:	SWFT eScooter
Identification:	SWFT-SD14-BLK
Test Standard:	FCC Part 15C
Test Detail:	Radiated Emission
Operation Mode:	A
Climate Condition:	22 °C, 53 %, 101 kPa
Test Voltage/ Freq:	
Receipt No:	170386300
Report No:	/
Result:	Pass
Comment:	Test distance is 3m; Vertical
Subrange 1	
Frequency range:	30-1000MHz
Receiver:	ESCI 3
Transducer:	VULB9168



Tested by: *Jim Chen*
20240914

Reviewed by: *Jacky Chen*
20240930

TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

Limit and Margin

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBµV/m)
54.360000	17.2	1000.0	120.000	V	20.7	22.8	40.0
148.080000	17.6	1000.0	120.000	V	21.2	25.9	43.5
184.000000	24.9	1000.0	120.000	V	19.2	18.6	43.5
366.120000	29.4	1000.0	120.000	V	23.8	16.6	46.0
447.480000	29.6	1000.0	120.000	V	26.5	16.4	46.0
892.560000	30.8	1000.0	120.000	V	34.2	15.3	46.0

Tested by:  20240914
Reviewed by:  20240930