



MPE TEST REPORT

Applicant Emerson White-Rodgers

FCC ID 2A4JN-ST765470

Product Sensi Touch 2

Brand Sensi

Model 1F96U-42WFB; 1F96U-42WF; ST76; ST76W; ST76U;
ST76WU; 1F96U-42WFBC; 1F96U-42WFC; ST76C;
ST76WC

Report No. R2211A1116-M1V1

Issue Date January 5, 2023

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC 47 CFR Part 1 1.1310**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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Version	Revision description	Issue Date
Rev.0	Initial issue of report.	January 4, 2023
Rev.1	Update data.	January 5, 2023
Note: This revised report (Report No.: R2211A1116-M1V1) supersedes and replaces the previously issued report (Report No.: R2211A1116-M1). Please discard or destroy the previously issued report and dispose of it accordingly.		



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 **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)

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

1.3 Testing Location

Company: TA Technology (Shanghai) Co., Ltd.
Address: Building 3, No.145, Jintang Rd, Pudong Shanghai, P.R.China
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1.4 Laboratory Environment

Temperature	Min. = 18°C, Max. = 25 °C
Relative humidity	Min. = 30%, Max. = 70%
Ground system resistance	< 0.5 Ω
Ambient noise is checked and found very low and in compliance with requirement of standards. Reflection of surrounding objects is minimized and in compliance with requirement of standards.	

2 Description of Equipment Under Test

Client Information

Applicant	Emerson White-Rodgers
Applicant address	8100 West Florissant Ave St. Louis/United States of America
Manufacturer	Emerson White-Rodgers
Manufacturer address	8100 West Florissant Ave St. Louis/United States of America

General Technologies

Model	1F96U-42WFB; 1F96U-42WF; ST76; ST76W; ST76U; ST76WU; 1F96U-42WFBC; 1F96U-42WFC; ST76C; ST76WC
SN	LSR305240-62
Hardware Version	0059-5470 REV.C
Software Version	RT1052: 0170-1581v02_03.hex SUB-G: 0170-1640v01_02.hex
Date of Sample Received	November 29, 2022

Note:

1. The EUT is sent from the applicant to TA and the information of the EUT is declared by the applicant.
2. All indications of Pass/Fail in this report are opinions expressed by 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.
3. The main test model is ST76 in this report.

Model Difference Table

Model Number	Description	Color	Channel	Instructions
1F96U-42WFB	Sensi Touch 2	Black	Pro	English
1F96U-42WF	Sensi Touch 2	White	Pro	English
ST76	Sensi Touch 2	Black	Retail	English
ST76W	Sensi Touch 2	White	Retail	English
ST76U	Sensi Touch 2	Black	Utility	English
ST76WU	Sensi Touch 2	White	Utility	English
1F96U-42WFBC	Sensi Touch 2	Black	Pro	French / English
1F96U-42WFC	Sensi Touch 2	White	Pro	French / English
ST76C	Sensi Touch 2	Black	Retail	French / English
ST76WC	Sensi Touch 2	White	Retail	French / English

Note: The customer declares that the models have the same PCB assembly, the only difference is color, package and sale channels.

3 Maximum Tune up and Antenna Gain

The numeric gain (G) of the antenna with a gain specified in dB is determined by

Numeric gain (G)= $10^{(\text{antenna gain}/10)}$

Band		Maximum Tune Up Power		Antenna Gain (dBi)	Numeric Gain
		(dBm)	(mW)		
Model 900MHz		16.00	39.81	0.41	1.10
Wi-Fi 2.4G		20.00	100.00	3.19	2.08
Wi-Fi 5G	U-NII-1	12.00	15.85	3.93	2.47
	U-NII-2A	10.00	10.00	3.94	2.48
	U-NII-2C	12.00	15.85	1.92	1.56
	U-NII-3	7.00	5.01	1.47	1.40
Bluetooth (Low Energy)		-2.00	0.63	3.19	2.08

4 Test Result

According to section 1.1310 of FCC 47 CFR Part 1, limits for maximum permissible exposure (MPE) are as following.

TABLE 1 – LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3-30	1842/f	4.89/f	*(900/f ²)	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

f = frequency in MHz

* = Plane-wave equivalent power density

Note1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational / controlled limits apply provided he or she is made aware of the potential for exposure.

Note2: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.



The maximum permissible exposure for 300~1500 MHz is f/1500, for 1500~100,000MHz is 1.0. So

Band	The Maximum Permissible Exposure (mW/cm ²)
Model 900MHz	0.60
Wi-Fi 2.4GHz	1.00
Wi-Fi 5GHz	1.00
Bluetooth (Low Energy)	1.00

**RF Exposure Calculations:**

The following information provides the minimum separation distance for the highest gain antenna provided. This calculation is based on the conducted power, considering maximum power and antenna gain. The formula shown in KDB 447498 D01 is used in the calculation.

Equation from KDB 447498 D01 General RF Exposure Guidance v06 (10/23/2015) is:

$$S = PG / 4\pi R^2$$

Where: S = power density (in appropriate units, e.g. mW/cm²)

P = Time-average maximum tune up procedure (in appropriate units, e.g., mW)

G = the numeric gain of the antenna

R = distance to the center of radiation of the antenna (20 cm = limit for MPE)

Band	Maximum Tune up (dBm)	Antenna Gain (dBi)	Maximum EIRP (dBm)	PG (mW)	Test Result (mW/cm ²)	Limit Value (mW/cm ²)
Model 900MHz	16.00	0.41	16.41	43.75	0.01	0.60
Wi-Fi 2.4G	20.00	3.19	23.19	208.40	0.04	1.00
Wi-Fi 5G (UNII-1)	12.00	3.93	15.93	39.18	0.01	1.00
Wi-Fi 5G (UNII-2A)	10.00	3.94	13.94	24.77	0.00	1.00
Wi-Fi 5G (UNII-2C)	12.00	1.92	13.92	24.66	0.00	1.00
Wi-Fi 5G (UNII-3)	7.00	1.47	8.47	7.03	0.00	1.00
Bluetooth (Low Energy)	-2.00	3.19	1.19	1.32	0.00	1.00
Note: R = 20cm π= 3.1416						

Model 900MHz and Wi-Fi 2.4G antenna and Wi-Fi 5G antenna and Bluetooth LE antenna can't transmit simultaneously.

Note: For transmitters, minimum separation distance is 20cm, even if calculations indicate MPE distance is less.

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



ANNEX A: The EUT Appearance

The EUT Appearance are submitted separately.