



RF EXPOSURE Test Report

Report No.: MTi220708003-01E5

Date of issue: 2022-08-27

Applicant: SBS S.p.A.

Product name: Fastskin Machine 3.0

Model(s): TEFSTSKINMACHINE30A

FCC ID: 2A7XH-FSTSKIN30

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.com>



Instructions

1. The report shall not be partially reproduced without the written consent of the laboratory;
2. The test results of this report are only responsible for the samples submitted;
3. This report is invalid without the seal and signature of the laboratory;
4. This report is invalid if transferred, altered or tampered with in any form without authorization;
5. Any objection to this report shall be submitted to the laboratory within 15 days from the date of receipt of the report.



TEST RESULT CERTIFICATION	
Applicant's name.....	SBS S.p.A.
Address.....	Via Circonvallazione sn Miasino Italy 28010
Manufacturer's Name	SBS S.p.A.
Address.....	Via Circonvallazione sn Miasino Italy 28010
Product description	
Product name	Fastskin Machine 3.0
Trademark	SBS
Model Name	TEFSTSKINMACHINE30A
Serial Model	N/A
Standards.....	N/A
Test procedure	KDB 447498 D01 v06
Date of Test	
Date (s) of performance of tests	2022-08-16 ~ 2022-08-27
Test Result.....	Pass

Testing Engineer

:

Eugene Qiu

(Eugene Qiu)

Technical Manager

:

Leon Chen

(Leon Chen)

Authorized Signatory

:

Tom Xue

(Tom Xue)



RF EXPOSURE EVALUATION

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) Radiation as specified in §1.1307(b)

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 Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f ²	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			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
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

MPE Calculation Method

Friis transmission formula: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

Where

P_d = Power density in mW/cm²

P_{out} = output power to antenna in mW

G = Numeric gain of the antenna relative to isotropic antenna

π = 3.1415926

R = distance between observation point and center of the radiator in cm(20cm)

P_d the limit of MPE, 1mW/cm². If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

Measurement Result

BT/BLE:

Operation Frequency: 2402-2480MHz,

Power density limited: 1mW/ cm²

2.4GWiFi:

Operation Frequency: WIFI 802.11b/g/n HT20: 2412-2462MHz,

802.11n HT40: 2422-2452MHz,

Power density limited: 1mW/ cm²

Antenna Type: FPC Antenna;

WIFI antenna gain: 2.30dBi

R=20cm

$mW=10^{(dBm/10)}$

antenna gain Numeric= $10^{(dBi/10)}=10^{(2.30/10)}=1.70$

BR+EDR:

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result	Power density Limits
		(dBm)		tune-up power		Gain		(mW/cm2)	
				(dBm)	(mW)	(dBi)	Numeric		
2402	GFSK	1.26	1±1	2	1.585	2.3	1.70	0.0005	1
2441		1.02	1±1	2	1.585	2.3	1.70	0.0005	1
2480		-0.39	0±1	1	1.259	2.3	1.70	0.0004	1
2402	π/4-DQPSK	1.2	1±1	2	1.585	2.3	1.70	0.0005	1
2441		0.72	1±1	2	1.585	2.3	1.70	0.0005	1
2480		-0.45	0±1	1	1.259	2.3	1.70	0.0004	1
2402	8DPSK	1.42	1±1	2	1.585	2.3	1.70	0.0005	1
2441		1.07	1±1	2	1.585	2.3	1.70	0.0005	1
2480		-0.11	0±1	1	1.259	2.3	1.70	0.0004	1



BLE:

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result	Power density Limits
		(dBm)		tune-up power		Gain		(mW/cm2)	(mW/cm2)
				(dBm)	(mW)	(dBi)	Numeric		
2402	GFSK	1.01	1±1	2	1.585	2.3	1.70	0.0005	1
2440		0.52	1±1	2	1.585	2.3	1.70	0.0005	1
2480		-0.42	0±1	1	1.259	2.3	1.70	0.0004	1

2.4GWiFi:

Channel Freq. (MHz)	modulation	conducted power	Tune-up power	Max		Antenna	Evaluation result at 20cm	Power density Limits
		(dBm)	(dBm)	tune-up power		Gain	Power density(mW/cm ²)	(mW/cm ²)
				(dBm)	(mW)	Numeric		
		Ant A	Ant A	Ant A	Ant A	Ant A	Ant A	
2412	802.11b	15.57	15±1	16	39.811	1.7	0.01346	1
2437		15.68	15±1	16	39.811	1.7	0.01346	1
2462		15.84	15±1	16	39.811	1.7	0.01346	1
2412	802.11g	13.18	13±1	14	25.119	1.7	0.00850	1
2437		13.98	13±1	14	25.119	1.7	0.00850	1
2462		13.83	13±1	14	25.119	1.7	0.00850	1
2412	802.11n H20	12.1	13±1	14	25.119	1.7	0.00850	1
2437		12.29	13±1	14	25.119	1.7	0.00850	1
2462		13.93	13±1	14	25.119	1.7	0.00850	1
2422	802.11n H40	12.75	13±1	14	25.119	1.7	0.00850	1
2437		12.57	13±1	14	25.119	1.7	0.00850	1
2452		13.96	13±1	14	25.119	1.7	0.00850	1

4G:

LTE FDD Band 2: 1850.7 – 1909.3MHz

LTE TDD Band 4: 1710.7 – 1754.3MHz

LTE FDD Band 5: 824.7 – 848.3MHz

LTE TDD Band 12: 699.7 – 715.3MHz

Band 2 Gain: 3.50dBi

Band 4 Gain: 3.50dBi

Band 5 Gain: 1.60dBi

Band 12 Gain: 0.4dBi

modulation	conducted power	Tune-up power (dBm)	Max		Antenna	Evaluation result	Power density Limits
	(dBm)		tune-up power		Gain	(mW/cm2)	(mW/cm2)
			(dBm)	(mW)	Numeric		
LTE Band 2	23.24	22.5±1	23.50	223.87211	2.24	0.09976	1
LTE Band 4	23.34	22.5±1	23.50	223.87211	2.24	0.09976	1
LTE Band 5	23.63	23±1	24.00	251.18864	1.45	0.07246	0.549
LTE Band 12	23.67	23±1	24.00	251.18864	1.10	0.05497	0.465

Conclusion:

The MPE ratio=Mac Test Result/Limit Value

So the simultaneous transmitting antenna pairs as below:

Σ of MPE ratio=LTE+WI-FI 2.4GHz+Bluetooth=0.07246/0.549+0.01346+0.0005=0.145945<1

----END OF REPORT----