

RF EXPOSURE EVALUATION REPORT

FCC ID : WIYS1F4CT001
Equipment : POS Terminal
Brand Name : 
Model Name : S1F4CT
Applicant : CASTLES TECHNOLOGY CO., LTD.
6F, NO. 207-5, SEC. 3, BEIXIN RD., XINDIAN DISTRICT,
NEW TAIPEI CITY 231030, TAIWAN (R.O.C.)
Manufacturer : CASTLES TECHNOLOGY CO., LTD.
6F, NO. 207-5, SEC. 3, BEIXIN RD., XINDIAN DISTRICT,
NEW TAIPEI CITY 231030, TAIWAN (R.O.C.)
Standard : 47 CFR Part 2.1091

We, SPORTON INTERNATIONAL INC has been evaluated this product in accordance with 47 CFR Part2.1091 and it complies with applicable limit.

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 3786) and the FCC designation No. TW3786 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC evaluation.

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Approved by: Cona Huang / Deputy Manager



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History of this test report

Report No.	Version	Description	Issued Date
FA660205	Rev. 01	Initial issue of report	Oct. 02, 2026

1. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	POS Terminal
Brand Name	 CASTLES TECHNOLOGY
Model Name	S1F4CT
FCC ID	WIYS1F4CT001
Wireless Technology and Frequency Range	WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV: 1710 MHz ~ 1755 MHz WCDMA Band V: 824 MHz ~ 849 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 66: 1710 MHz ~ 1780 MHz WLAN 2.4 GHz Band: 2400 MHz ~ 2483.5 MHz WLAN 5.2 GHz Band: 5150 MHz ~ 5250 MHz WLAN 5.3 GHz Band: 5250 MHz ~ 5350 MHz WLAN 5.6 GHz Band: 5470 MHz ~ 5725 MHz WLAN 5.8 GHz Band: 5725 MHz ~ 5850 MHz Bluetooth: 2400 MHz ~ 2483.5 MHz NFC: 13.56MHz
Mode	RMC 12.2Kbps LTE: QPSK, 16QAM, 64QAM WLAN: 802.11a/b/g/n/ac HT20/HT40/VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE NFC: ASK
EUT Stage	Identical Prototype

Reviewed by: Jason Wang

Report Producer: Carlie Tsai

2. Maximum RF average output power among production units

<WWAN>

Maximum power (dBm)		
Mode		Ant 1
WCDMA	Band 2	23
	Band 4	23
	Band 5	23

Maximum power (dBm)		
Mode		Ant 1
LTE	Band 2	24
	Band 4	24
	Band 5	23
	Band 7	21
	Band 12	23
	Band 17	23
	Band 25	24
	Band 26	23
	Band 38	23
	Band 41	23
	Band 66	24

<NFC>

Maximum EIRP power (dBm)	
NFC	-54.16

<WLAN/BT>

Mode / Band	Average Power (dBm)				
	EDR			LE	
	1Mbps	2Mbps	3Mbps	1Mbps	2Mbps
2.4 GHz Bluetooth	15	13	13	10	10

2.4GHz WLAN	Mode	Channel	Frequency (MHz)	Tune-Up Limit
	802.11b 1Mbps	1	2412	21
		6	2437	18
		11	2462	18
	802.11g 6Mbps	1	2412	19
		6	2437	22
		11	2462	18
	802.11n-HT20 MCS0	1	2412	18
		6	2437	22
		11	2462	17

5.2GHz WLAN	Mode	Channel	Frequency (MHz)	Tune-Up Limit
	802.11a 6Mbps	36	5180	21
		40	5200	23
		44	5220	23
		48	5240	22
	802.11n-HT20 MCS0	36	5180	21
		40	5200	23
		44	5220	23
		48	5240	22
	802.11n-HT40 MCS0	38	5190	22
		46	5230	24
	802.11ac-VHT20 MCS0	36	5180	21
		40	5200	23
		44	5220	23
		48	5240	22
	802.11ac-VHT40 MCS0	38	5190	22
		46	5230	24
	802.11ac-VHT80 MCS0	42	5210	21

5.3GHz WLAN	Mode	Channel	Frequency (MHz)	Tune-Up Limit
	802.11a 6Mbps	52	5260	22
		56	5280	22
		60	5300	22
		64	5320	22
	802.11n-HT20 MCS0	52	5260	22
		56	5280	22
		60	5300	22
		64	5320	22
	802.11n-HT40 MCS0	54	5270	24
		62	5310	22
	802.11ac-VHT20 MCS0	52	5260	22
		56	5280	22
		60	5300	22
		64	5320	22
	802.11ac-VHT40 MCS0	54	5270	24
		62	5310	22
	802.11ac-VHT80 MCS0	58	5290	21

5.5GHz WLAN	Mode	Channel	Frequency (MHz)	Tune-Up Limit
	802.11a 6Mbps	100	5500	22
		116	5580	22
		124	5620	22
		132	5660	22
		144	5720	22
	802.11n-HT20 MCS0	100	5500	22
		116	5580	22
		124	5620	22
		132	5660	22
		144	5720	22
	802.11n-HT40 MCS0	102	5510	22
		110	5550	24
		126	5630	22
		134	5670	22
		142	5710	22
	802.11ac-VHT20 MCS0	100	5500	22
		116	5580	22
		124	5620	22
		132	5660	22
		144	5720	22
	802.11ac-VHT40 MCS0	102	5510	22
		110	5550	24
		126	5630	22
		134	5670	22
		142	5710	22
	802.11ac-VHT80 MCS0	106	5530	20
		122	5610	20
		138	5690	20

5.8GHz WLAN	Mode	Channel	Frequency (MHz)	Tune-Up Limit
	802.11a 6Mbps	149	5745	25
		157	5785	25
		165	5825	26
	802.11n-HT20 MCS0	149	5745	25
		157	5785	25
		165	5825	26
	802.11n-HT40 MCS0	151	5755	26
		159	5795	26
	802.11ac-VHT20 MCS0	149	5745	25
		157	5785	25
		165	5825	26
	802.11ac-VHT40 MCS0	151	5755	26
		159	5795	26
	802.11ac-VHT80 MCS0	155	5775	24

3. RF Exposure Limit Introduction

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

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
3.0-30	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

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$S = \frac{PG}{4\pi R^2}$$

Where:

S = Power Density

P = Output Power at Antenna Terminals

G = Gain of Transmit Antenna (linear gain)

R = Distance from Transmitting Antenna

4. Radio Frequency Radiation Exposure Evaluation

4.1. Collocated Power Density Calculation

Band	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum PG (mW)	Power Density at 20cm (mW/cm ²)	Limit (mW/cm ²)	Power Density / Limit
WCDMA Band 2	-1.19	23.00	21.8	151.71	0.030	1.000	0.030
WCDMA Band 4	-1.11	23.00	21.9	154.53	0.031	1.000	0.031
WCDMA Band 5	-0.21	23.00	22.8	190.11	0.038	0.536	0.071
LTE Band 2	-1.19	24.00	22.8	190.99	0.038	1.000	0.038
LTE Band 4	-1.11	24.00	22.9	194.54	0.039	1.000	0.039
LTE Band 5	-0.21	23.00	22.8	190.11	0.038	0.549	0.069
LTE Band 7	-1.38	21.00	19.6	91.62	0.018	1.000	0.018
LTE Band 12	-1.92	23.00	21.1	128.23	0.026	0.466	0.055
LTE Band 17	-1.92	23.00	21.1	128.23	0.026	0.469	0.054
LTE Band 25	-1.19	24.00	22.8	190.99	0.038	1.000	0.038
LTE Band 26	-0.21	23.00	22.8	190.11	0.038	0.543	0.070
LTE Band 38	-1.38	23.00	21.6	145.21	0.029	1.000	0.029
LTE Band 41	-1.38	23.00	21.6	145.21	0.029	1.000	0.029
LTE Band 66	-1.11	24.00	22.9	194.54	0.039	1.000	0.039
Bluetooth	-2.01	15.00	13.0	19.91	0.004	1.000	0.004
2.4GHz WLAN	-2.01	22.00	20.0	99.77	0.020	1.000	0.020
5.2GHz WLAN	-2.05	24.00	22.0	156.68	0.031	1.000	0.031
5.3GHz WLAN	-2.20	24.00	21.8	151.36	0.030	1.000	0.030
5.5GHz WLAN	-2.81	24.00	21.2	131.52	0.026	1.000	0.026
5.8GHz WLAN	-3.26	26.00	22.7	187.93	0.037	1.000	0.037
NFC			-54.16	0.000004	< 0.001	0.979	< 0.001

WWAN Power Density / Limit	WLAN Power Density / Limit	Bluetooth Power Density / Limit	NFC Power Density / Limit	Σ (Power Density / Limit) of WWAN+WLAN+Bluetooth
0.071	0.037	0.004	0.001	0.113

Note:

- Σ (Power Density / Limit): This is a summation of [(power density for each transmitter/antenna included in the simultaneous transmission)/ (corresponding MPE limit)]
- Considering the transmitters of the EIRP performance listed in the table above, the aggregated (power density /limit) is smaller than 1, and MPE of 4 collocated transmitters is compliant.

Conclusion:

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.