

RF EXPOSURE REPORT



Report No.: 17020576-FCC-H1

Supersede Report No.: N/A

Applicant	Sangoma Technologies Corp.		
Product Name	IP PHONE		
Model No.	S705		
Serial Model	S505		
Test Standard	FCC 2.1091		
Test Date	June 05 to June 27, 2017		
Issue Date	June 28, 2017		
Test Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail		
Equipment complied with the specification		<input checked="" type="checkbox"/>	
Equipment did not comply with the specification		<input type="checkbox"/>	
<i>Trety Lu</i>		<i>Deon Dai</i>	
Trety Lu Test Engineer		Deon Dai Engineer Reviewer	
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Issued by:
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Laboratories Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.



In addition to testing and certification, SIEMIC provides initial design reviews and compliance management throughout a project. Our extensive experience with China, Asia Pacific, North America, European, and International compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the global markets.

Accreditations for Conformity Assessment

Country/Region	Scope
USA	EMC, RF/Wireless, SAR, Telecom
Canada	EMC, RF/Wireless, SAR, Telecom
Taiwan	EMC, RF, Telecom, SAR, Safety
Hong Kong	RF/Wireless, SAR, Telecom
Australia	EMC, RF, Telecom, SAR, Safety
Korea	EMI, EMS, RF, SAR, Telecom, Safety
Japan	EMI, RF/Wireless, SAR, Telecom
Singapore	EMC, RF, SAR, Telecom
Europe	EMC, RF, SAR, Telecom, Safety

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1 Report Revision History

Report No.	Report Version	Description	Issue Date
17020576-FCC-H1	NONE	Original	June 28, 2017

2 Customer information

Applicant Name	Sangoma Technologies Corp.
Applicant Add	100 Renfrew Drive, Suite 100 / Markham, ON L3R 9R6 CANADA
Manufacturer	Sangoma Technologies Corp.
Manufacturer Add	100 Renfrew Drive, Suite 100 / Markham, ON L3R 9R6 CANADA

3 Test site information

Lab performing tests	SIEMIC (Nanjing-China) Laboratories
Lab Address	2-1 Longcang Avenue Yuhua Economic and Technology Development Park, Nanjing, China
FCC Test Site No.	986914
IC Test Site No.	4842B-1
Test Software	EZ EMC

4 Equipment under Test (EUT) Information

Description of EUT:	IP PHONE
Main Model:	S705
Serial Model:	S505
Date EUT received:	May 18, 2017
Test Date(s):	June 05 to June 27, 2017
Output power	BT:10.455 dBm BLE:2.704dBm WIFI:802.11b: 19.24 dBm 802.11n(40M): 15.07 dBm
Antenna Gain:	Bluetooth/WIFI/BLE: 2.8 dBi
Type of Modulation:	WIFI:802.11b/g/n(20M/40M): DSSS, OFDM Bluetooth: GFSK& π /4-DQPSK&8DPSK BLE:GFSK
RF Operating Frequency (ies):	Bluetooth&BLE: 2402-2480 MHz WIFI:802.11b/g/n(20M): 2412-2472 MHz 802.11n(40M):2422-2462 MHz
Number of Channels:	Bluetooth: 79CH BLE: 40CH WIFI :802.11b/g/n(20M): 13CH WIFI :802.11n(40M): 9CH
Port:	Power Port、Ext Port、 Internet Port、 PC Port、 Earphone Port、 Telephone Port
Input Power:	Adapter: Model:NBS05B050120VU Input Power:100-240V,50/60Hz,0.2A Output:5V,1.2A
Trade Name :	Sangoma
FCC ID:	2AL9Y-PHONS705A

5 FCC §2.1091 - Maximum Permissible exposure (MPE)

Applicable Standard

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

According to §1.1310 and §2.1091 RF exposure is calculated.

Limits for General Population/Uncontrolled Exposure

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minutes)
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

Test Data

Predication of MPE limit at a given distance

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

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

P = power input to the antenna (in appropriate units, e.g., mW).

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

Type	Modulation	CH	Freq (MHz)	Conducted Power (dBm)	Limit (mW)	Result
Output power	GFSK	Low	2402	8.150	125	Pass
		Mid	2441	8.344	125	Pass
		High	2480	8.286	125	Pass
	$\pi/4$ DQPSK	Low	2402	9.934	125	Pass
		Mid	2441	9.982	125	Pass
		High	2480	9.975	125	Pass
	8-DPSK	Low	2402	10.062	125	Pass
		Mid	2441	10.067	125	Pass
		High	2480	10.455	125	Pass

Type	Test mode	CH	Freq (MHz)	Conducted Power (dBm)	Limit (dBm)	Result
Output power	802.11b	1	2412	19.14	30	Pass
		6	2437	19.20	30	Pass
		11	2462	19.24	30	Pass
		12	2467	19.06	30	Pass
		13	2472	19.08	30	Pass
	802.11g	1	2412	17.81	30	Pass
		6	2437	18.22	30	Pass
		11	2462	18.39	30	Pass
		12	2467	18.36	30	Pass
		13	2472	17.98	30	Pass
	802.11n(20M)	1	2412	18.09	30	Pass
		6	2437	18.25	30	Pass
		11	2462	18.39	30	Pass
		12	2467	18.23	30	Pass
		13	2472	18.09	30	Pass
	802.11n(40M)	3	2422	14.69	30	Pass
		6	2437	15.03	30	Pass
		9	2452	15.07	30	Pass
		10	2457	15.02	30	Pass
		11	2462	14.95	30	Pass

Type	Test mode	CH	Freq (MHz)	Conducted Power (dBm)	Limit (dBm)	Result
Output power	BLE	Low	2402	2.704	30	Pass
		Mid	2440	2.554	30	Pass
		High	2480	2.491	30	Pass

Test mode	Freq (MHz)	Max Conducted Power (dBm)	MPE(mW/cm ²)	Limit (mW/cm ²)	Result
BT	2480	10.455	0.0042	1	Pass
BLE	2402	2.704	0.0007	1	Pass
802.11b	2462	19.24	0.0320	1	Pass
802.11g	2462	18.39	0.0262	1	Pass
802.11n(20M)	2462	18.39	0.0262	1	Pass
802.11n(40M)	2452	15.07	0.0122	1	Pass

Simultaneous transmission MPE result:

BT+802.11b

$0.0042 + 0.0320 = 0.0362 \text{ mW/cm}^2$

$0.0362 \text{ mW/cm}^2 < 1 \text{ mW/cm}^2$

BLE+802.11b

$0.0007 + 0.0320 = 0.0327 \text{ mW/cm}^2$

Result: Pass

Antenna Gain (typical): 2.8dBi, 2.0(numeric)

Prediction distance: $\geq 20 \text{ cm}$

The power density level worst case at 20 cm is below the uncontrolled exposure limit.