

1. Purpose

This report evaluates the RF exposure of the SON151 base station. This report follows the calculations outlined in OET bulletin 65, Edition 97-01.

2. References

- RSS-102, Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands), Issue 5
- FCC 47 CFR Part 1, section 1.310
- FCC KDB 447498 DO1, RF Exposure Procedures and Equipment Authorization Policies for Mobile and Portable Devices, V6
- OET bulletin 65, Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields, Edition 97-01

3. Equipment Description

Description	DECT 6.0 Base Station
Model	SON151
Additional Model(s)	FL51C.v2, FL51PC.v2, WB505R.v2
Brand Name(s)	Sonetechs Corporation
Serial Number	PROTO1
HW version	Rev A
FW Version	V0.01
FCC ID	V9B950344001V1
IC	7895A-950344001
Equipment type	End Product

3.1. Radiation Sources

Mode	Description	
UPCS	Frequency Range	1921.536 – 1928.448 MHz
	Channels	5
	Modulations	GFSK
	Max Conducted power [dBm]	20.1
	Antenna gain [dBi]	3.0
	Antenna diameter [cm]	13.3

4. RF Exposure Classifications

The tables below show the IC and FCC limits for mobile devices in the General public exposure category:

FCC Limits – Occupational / Controlled Exposure				
Frequency range [MHz]	Electric field strength [V/M]	Magnetic field strength [A/M]	Power density [mW/cm ²]	Averaging time [min]
0.3 - 30	614	1.63	100	6
3.0 - 30	1842/f	4.89/f	900 / f ²	6
30 - 300	61.4	0.163	1	6
300 - 1500	N/A	N/A	f/300	6
1500 - 100000	N/A	N/A	5	6

FCC Limits – General Population / Uncontrolled Exposure				
Frequency range [MHz]	Electric field strength [V/M]	Magnetic field strength [A/M]	Power density [mW/cm ²]	Averaging time [min]
0.3 - 1.34	614	1.63	100	30
1.34 - 30	842/f	2.19/f	180/f ²	30
30 - 300	27.5	0.073	0.2	30
300 - 1500	N/A	N/A	f/1500	30
1500 - 100000	N/A	N/A	1	30

IC Limits – Occupational / Controlled Exposure				
Frequency range [MHz]	Electric field strength [V/M]	Magnetic field strength [A/M]	Power density [W/m ²]	Averaging time [min]
1.0 - 10.0	600/f	4.9/f	N/A	6
10.0 - 30.0	60	4.9/f	N/A	6
30 - 300	60	0.163	10	6
300 - 1500	3.54 * f ^{0.5}	.0094*f ^{0.5}	f/30	6
1500 - 15000	137	0.364	50	6

IC Limits – General Population / Uncontrolled Exposure				
Frequency range [MHz]	Electric field strength [V/M]	Magnetic field strength [A/M]	Power density [W/m ²]	Averaging time [min]
1.0 - 10.0	280/f	2.19/f	N/A	30
10.0 - 30.0	28	2.19/f	N/A	30
30 - 300	28	0.073	2	30
300 - 1500	1.585*f ^{0.5}	.0042*f ^{0.5}	f/150	30
1500 - 15000	61.4	0.163	5	30

5. Assessment

OET bulletin 65 uses the following equation to predict the strength of an RF field at a given distance:

$$S = \frac{P * G}{4 * \pi * R^2}$$

Where:

S = power density (mW/cm² or W/m²)

P = Power input to the antenna (mW)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna (cm)

The results of the assessment are shown below:

Assessment Results		
Variable	Value	Unit
Assessment frequency (f)	1921.536	MHz
Peak Conducted Power (P)	20.1	dBm
Peak Antenna Gain (G)	102.3292992	mW
Distance (R)	3	dBi
Power Density (S)	2	cm
	0.040715534	mW/cm ²
	0.407155345	W/m ²

The power density of the EUT at 20cm is below the FCC/IC MPE limit.