

RF Exposure Evaluation

of

E.U.T. : RCA 25450 4- Line Wireless Telephone
System

FCC ID. : G9H2-5450A

MODEL : 25450XXX-A

for

APPLICANT : ATLINKS USA Inc.

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Prepared by

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Product Information:

Type of EUT: RCA 25450 4- Line Wireless Telephone System

FCC ID: G9H2-5450A

Manufacturer: SENAO INTERNATIONAL CO., LTD.

Model: 25450XXX- A

Description: The RCA 25450 4-line Telephone System is ideal for users in various residential and business settings. With sophisticated digital signal processing and high quality hardware designs, the RCA 25450 provides long-range telephone connections and 2-way handset-to-handset communications in a wide variety of environment from around-the-house, multi-level office buildings, factories, hotels/resorts, warehouses, retail stores, convention facilities, farms, business complexes, construction sites, schools, car dealerships, grocery stores, and many others.

Maximum conducted output power (measured): Handset Unit:
23.46 dBm or **221.82** mW
 Base Unit:
24.69 dBm or **294.44** mW

The following table lists the provided authorized antennas:

Model	Antenna Type	Antenna Gain	
		(dBi)	Numeric
GHF-H2RCXXXX-101	902~928MHz FlyingLead Antenna (Handset)	0	1.0
GHF-M1RCXXXX-101	902~928MHz FlyingLead Antenna (Base)	2.0	1.58

Below is an example of the RF Exposure Statement:

FCC RF Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body. This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter."

For body worn operation, this phone has been tested and meets the FCC RF exposure guidelines when used with the belt clip supplied with this product. Use of other accessories may not ensure compliance with FCC RF exposure guidelines.

Relative Requirement for Compliance

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

NOTE 1 TO TABLE 1: 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.

NOTE 2 TO TABLE 1: 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.

RF Exposure Calculations:

The following information provides the minimum separation distance for the highest gain antenna provided. This calculation is based on the highest EIRP possible from the system, considering maximum power and antenna gain, and considering a 1.0 mW/cm² uncontrolled exposure limit. The formula shown in OET Bulletin 65 is used in the calculation.

Equation from page 19 of OET Bulletin 65, Edition 97-01 is:

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

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

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

hence

$$R = (PG / 4\pi S)^{1/2}$$

For our device

(a) Handset Unit:

P = 221.82 mW

Dwell Time of each channel within a 20 second period = 56.8 ms

Time Division Source Based Average Power

= 221.82 x (56.8 ms x 50 CHs / 20 second period)

= 31.50 mW

This device complies with the MPE requirements by virtue of the fact that it is considered to comply with SAR evaluation without testing.

(b) Base Unit:

$$P = 294.44 \text{ mW}$$

Dwell Time of each channel within a 20 second period = 204 ms

Time Division Source Based Average Power

$$= 294.44 \times (204 \text{ ms} \times 50 \text{ CHs} / 20 \text{ second period})$$

$$= 150.2 \text{ mW}$$

$$G = 1.58$$

$$S = \text{Exposure limit} = 1.0 \text{ mW/cm}^2$$

$$R = ((150.2 * 1.58) / (4 * *1.0))^{1/2}$$

$$= \underline{\underline{4.35 \text{ cm}}}$$

For complying the FCC limits for general population/uncontrolled exposure, the minimum MPE distance is 4.35 cm.

According to OET Bulletin 65 (Edition 97-01), Supplement C (Edition 01-01), the equipment fulfills the requirements on power density for general population/uncontrolled exposure and therefore fulfills the requirements of 47 CFR Part 15.247 (b)(5).