RF EXPOSURE

According to §15.247(b)(4) and §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 §2.1093 RF exposure is calculated.
Limits for Maximum Permissive Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Averaging Time (minute)
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
1500-15000	/	/	1.0	30

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

Equation from page 18 of OET Bulletin 65, Edition 97-01

0.6 mW/cm²

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

Where:
S = power density
P = power input to antenna
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

Maximum peak output power at antenna output terminal: 8.88 (dBm)
Maximum peak output power at antenna output terminal: 7.72 (mW)
Maximum antenna gain: 0.794 (-2dB)

Prediction distance: 20 (cm)
Predication frequency: 900 (MHz)

Power density at predication frequency at 20 cm: 1.2 $^{-2}$ (mW/cm^2)
MPE limit for uncontrolled exposure at prediction frequency: 0.6 (mW/cm^2)

Intertek ETL SEMKO

STATEMENT ON MAXIMUM PERMISSIBLE EXPOSURE

No. 816633-2

EQUIPMENT

Type of equipment:	Wireless Thermostat
Brand name:	Uponor
Type / Model:	T54 Uponor thermostat
Manufacturer:	Hager Controls SAS
By request of:	Hager Controls SAS

DIRECTIVE

OET Bulletin 65, supplement C

CALCULATIONS

The product has an output power of approximate 9dBm = 8 mW EIRP
The manual recommends that the operator is not closer than (r) 20 cm to the transmitter's antenna.

A worst case calculation is as follows (assuming dutycycle is 100%):

$$S = \frac{4 \times dc \times EIRP}{4 \times \pi \times r^2} = \frac{4 \times 100\% \times 8}{4 \times \pi \times 20^2} = 0.006 mW / cm^2$$

Reference level limit (General Population/Uncontrolled Exposure) according to OET Bulletin 65, supplement C for power density at 928 MHz is 928 / 1500 = 0.619 mW/cm^2.

Considering the calculations above it is determined that the requirements according to the referred directive are fulfilled without testing.

Intertek Semko AB
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Niklas Boström

Intertek Semko AB
Torshamnsgatan 43, Box 1103, SE-164 22 Kista, Sweden
Telephone +46 8 750 00 00, Fax +46 8 750 60 30, www.sweden.intertek-etlsemko.com
Registered in Sweden: No SE556024059901, Registered office: As address