

Ref: Nemko test report no: 204805B
Espoo 31.03.2012

Equipment under test:

Remote control: RC917FHH/TR02 915 MHz Transceiver
Manufacturer: Scanreco Industrietechnik

RF Exposure Portable

The following data is from test report:

Maximum measured output power = 108.6 mW peak (from test report), which will be also used for the handy remote control units near the persons.

Transmission duration = 48.4 msec, this is 0.0484 sec

Number of hops in one hop cycle 50.

Duration of hop cycle 2.5 sec.

Duty cycle: $(0.0484 * 50) / 2.5 = 96,8\%$

Extremity SAR exclusion is based on 96,8% maximum duty cycle and 40mm separation distance.

P	20,36	dBm
Tune-up tolerance	0,50	dB
Duty Cycle	96,80	%
P average	118,00	mW
d	40	mm
f	927,95	MHz
x	7,5	for 1-g SAR
SAR exclusion Limit	2,84	<3
Pmax	311	mW

* calculated using 447498 D01 General RF Exposure Guidance v05r02 section 4.3.1 1) $\left[\frac{\text{(max. power of channel, including tune-up tolerance, mW)}}{\text{(min. test separation distance, mm)}} \right] \cdot \sqrt{f(\text{GHz})}$

This is below the threshold of 4.3.1. (1) SAR evaluation exemption of 447498 D01 General RF Exposure Guidance v05r02 .

This filing is a limited modular approval for installation of this module by the manufacturer into their own products. The final application is industrial radio remote control products. The internal antenna will always be located at least 4 cm from the nearest host enclosure wall. The external fixed antenna will be mounted at least 20 cm from nearby persons. For example; when used on fixed mount unit the antenna is often mounted somewhere high typically on the roof of a truck or lorry. Therefore this configuration will comply with RF exposure requirements.

Prediction of MPE limit at a given distance

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

S = power density
P = power input to the antenna
G = antenna gain
R = distance

Conducted output power:	20,36	(dBm)
Tune up tolerance	0,5	(dB)
Number of carriers	1	(N)
	121,9	(mW)
	0,1219	(W)
P Average	0,1219	(W)
Antenna gain:	3,5	(dBi)
Maximum antenna gain:	2,24	(numeric)
EIRP Average	0,273	(W)
ERP Average	0,1667	(W)
Distance:	20	(cm)
Duty Cycle:	100	(%)
Frequency:	927,5	(MHz)
MPE Limit:	0,619	(mW/cm ²)
Power density:	0,0543	(mW/cm ²)
	0,543	(W/m ²)
Margin	10,6	(dB)

Industry Canada SAR Exclusion Analysis

RSS-102 Issue 4

2.5.1 Exemption from Routine Evaluation Limits – SAR Evaluation

SAR evaluation is required if the separation distance between the user and the radiating element of the device is less than or equal to 20 cm, except when the device operates as follows:

- from 3 kHz up to 1 GHz inclusively, and with output power (i.e. the higher of the conducted or equivalent isotropically radiated power (e.i.r.p.) source-based, time-averaged output power) that is less than or equal to 200 mW for general public use and 1000 mW for controlled use;

The maximum radiated (e.i.r.p) source-based time averaged output power is 121,9mW. This is based on 100% duty cycle and 3,5 dBi max gain of internal antenna.