Product: Set top box
Trademark: Sagemcom
Manufacturer: Sagemcom
Model: DIW3930 Cogeco
FCC ID: **VW3DIW3930**

Prediction of MPE limit at a given distance

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

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

where: S = power density
P = power input to the 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

Transmitter n°1 (Wi-Fi 2,4GHz: 2400-2483,5 MHz)

Maximum peak output power at the antenna terminal:	24,53	(dBm)
Maximum peak output power at the antenna terminal:	283,7919028	(mW)
Antenna gain(typical):	3,96	(dBi)
Maximum antenna gain:	2,488857318	(numeric)
Prediction distance:	20	(cm)
Prediction frequency:	2412	(MHz)
MPE limit for uncontrolled exposure at prediction frequency:	1	(mW/cm^2)
Power density at prediction frequency:	0,140517	(mW/cm^2)

Note : Transmitter n°1 includes 2 antennas for 2.4GHz
Equivalent maximum gain for the 2 combinated antenna is equal to 3,96 dBi
24,53 dBm is the maximum power delivered to the 2 combinated antennas

Transmitter n°2 (Wi-Fi 5GHz: 5150-5850 MHz)

Maximum peak output power at the antenna terminal:	26,60	(dBm)
Maximum peak output power at the antenna terminal:	457,0881896	(mW)
Antenna gain(typical):	4,86	(dBi)
Maximum antenna gain:	3,061963434	(numeric)
Prediction distance:	20	(cm)
Prediction frequency:	5150	(MHz)
MPE limit for uncontrolled exposure at prediction frequency:	1	(mW/cm^2)
Power density at prediction frequency:	0,278439	(mW/cm^2)

Note : Transmitter n°2 includes 2 antennas for 5150-5850 MHz band
Equivalent maximum gain for these 2 combinated antennais equal to 4,86dBi
26,6 dBm is the maximum power delivered to the 2 combinated antennas

Transmitter n°3 (Bluetooth classic: 2400-2483,5 MHz)

Maximum peak output power at the antenna terminal:	6,23	(dBm)
Maximum peak output power at the antenna terminal:	4,19758984	(mW)
Antenna gain(typical):	3,62	(dBi)
Maximum antenna gain:	2,301441817	(numeric)
Prediction distance:	20	(cm)
Prediction frequency:	2405	(MHz)
MPE limit for uncontrolled exposure at prediction frequency:	1	(mW/cm^2)
Power density at prediction frequency:	0,001922	(mW/cm^2)

Transmitter n°4 (Bluetooth BLE: 2400-2483,5 MHz)

Maximum peak output power at the antenna terminal:	4,14	(dBm)
Maximum peak output power at the antenna terminal:	2,594179362	(mW)

Antenna gain(typical):	3,62	(dBi)
Maximum antenna gain:	2,301441817	(numeric)
Prediction distance:	20	(cm)
Prediction frequency:	2405	(MHz)
MPE limit for uncontrolled exposure at prediction frequency:	1	(mW/cm^2)
Power density at prediction frequency:	0,001188	(mW/cm^2)

Transmitter n°1 (Wi-Fi: 2400-2483,5 MHz) + Transmitter n°3 (Bluetooth EDR: 2400-2483,5 MHz)

[Pd(1)/LPd(1)] + [Pd(3)/LPd(3)] = 0,14244
<1

Transmitter n°1 (Wi-Fi: 2400-2483,5 MHz) + Transmitter n°4 (Bluetooth LE: 2400-2483,5 MHz)

[Pd(1)/LPd(1)] + [Pd(4)/LPd(4)] = 0,14171
<1

Transmitter n°2 (Wi-Fi: 5150-5850 MHz) +Transmitter n°3 (Bluetooth EDR: 2400-2483,5 MHz)

[Pd(2)/LPd(2)] + [Pd(3)/LPd(3)]= 0,28036
<1

Transmitter n°2 (Wi-Fi: 5150-5850 MHz) + Transmitter n°4 (Bluetooth LE: 2400-2483,5 MHz)

[Pd(2)/LPd(2)] + [Pd(4)/LPd(4)] = 0,27963
<1