

## Maximum Permissible Exposure (MPE) & Exposure evaluation

Report identification number: 1-3338/17-02-08

Certification numbers and labeling requirements	
FCC ID	SFX-40EU335001
IC number	10140A-40EU335001
HVIN (Hardware Version Identification Number)	40EU335001
PMN (Product Marketing Name)	RCM V2
FVIN (Firmware Version Identification Number)	-/-
HMN (Host Marketing Name)	-/-

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### Document authorized:

Thomas Vogler  
Lab Manager  
Radio Communications & EMC

**EUT technologies:**

Technologies:	Max. output:	Max. antenna gain:	Min. pathloss:
Radar @ 10.5 Ghz	128 dBµV/m @3 m = 33 dBm EIRP (declared)	n/a	-- (if applicable)

**Prediction of MPE limit at given distance - FCC**

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

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

where: S = Power density  
P = Power input to the antenna  
G = Antenna gain  
R = Distance to the center of radiation of the antenna

The table below is excerpted from Table 1B of 47 CFR 1.1310 titled "Limits for Maximum Permissible Exposure (MPE), Limits for General Population/Uncontrolled Exposure"

Frequency Range (MHz)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (minutes)
300 -1500	f/1500	30
1500 - 100000	1.0	30

where f = Frequency (MHz)

**Prediction: worst case**

		> 1500 MHz
	Technology	10.5 GHz radar
PG	Max EIRP	33 dBm
R	Distance	20 cm
S	MPE limit for uncontrolled exposure	1 mW/cm <sup>2</sup>
	<b>Calculated Power density:</b>	0.398 mW/cm <sup>2</sup>

**This prediction demonstrates the following:**

The power density levels for FCC at a distance of 20 cm are below the maximum levels allowed by regulations.

**Prediction of MPE limit at given distance - IC**

RSS-102, Issue 5, 2.5.2

RF exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows:

- below 20 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1 W (adjusted for tune-up tolerance);
- at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than  $4.49/f^{0.5}W$  (adjusted for tune-up tolerance), where  $f$  is in MHz;
- at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance);
- at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than  $1.31 \times 10^{-2} f^{0.6834} W$  (adjusted for tune-up tolerance), where  $f$  is in MHz;
- at or above 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 5 W (adjusted for tune-up tolerance).

**Prediction: worst case**

	Technology	10.5 GHz radar
PG	Max EIRP	33 dBm
	Max EIRP	2000 mW
	Exclusion Limit from above	5000 mW

**Conclusion:** RF exposure evaluation is not required.

For applications where minimum distance to radiating element is 20cm Annex C of RSS-102 should be filled out.