

MPE exemption letter 24-1-0040201T002-TR1-R02

MPE exemption letter according Interim procedure KDB 447498 D04

Customer	Product	Model	Type	HW Status	SW status	FCC ID
Husqvarna AB Drottninggatan 2 SE-561 82 Huskvarna Sweden	Milimeter wave radar sensor	Radar Module Type 1	--	531262402	52.100_Radar-Boot, 52.1_Radar-App_24.66	ZASHQ-RAD-1

Declared test separation distance customer: $d = 200\text{mm}$.

The customer thus declares that the device is not body-worn.

RF Exposure Test Exemptions for Single Source

MPE-based Exemption

According 1.1307(b)(3)(i)(C) Option C – ERP at frequencies above 300 kHz but at distances $R > \lambda/2\pi$ can be exempted as follows:

TABLE B.1—THRESHOLDS FOR SINGLE RF SOURCES
SUBJECT TO ROUTINE ENVIRONMENTAL EVALUATION

RF Source Frequency			Minimum Distance			Threshold ERP
f_L MHz		f_H MHz	$\lambda_L / 2\pi$		$\lambda_H / 2\pi$	W
0.3	–	1.34	159 m	–	35.6 m	$1,920 R^2$
1.34	–	30	35.6 m	–	1.6 m	$3,450 R^2/f^2$
30	–	300	1.6 m	–	159 mm	$3.83 R^2$
300	–	1,500	159 mm	–	31.8 mm	$0.0128 R^2 f$
1,500	–	100,000	31.8 mm	–	0.5 mm	$19.2 R^2$
Subscripts L and H are low and high; λ is wavelength. From § 1.1307(b)(3)(i)(C), modified by adding Minimum Distance columns.						

Calculation based on reference document

#	Document	Document Type	Additional Information
A	24-1-0040201T001_TR1-R02	cetecom advanced Report	Pg. 40, EIRP (16.27 dBm)

MPE exemption letter 24-1-0040201T002-TR1-R02

FMCW radar

MPE-based Exemption

Exemption acc. TABLE 1 TO § 1.1307(b)(3)(i)(C)—SINGLE RF SOURCES SUBJECT TO ROUTINE ENVIRONMENTAL EVALUATION										
Band	Technology	Frequency	$\lambda/2\pi$	R	$R \geq \lambda/2\pi$ fulfilled	EIRP	ERP	ERP	Threshold ERP	MPE Exemption fulfilled
		(MHz)	(m)	(m)		(dBm)	(dBm)	(W)	(W)	
57 GHz to 60.726GHz	FMCW radar	57000.0	0.001	0.200	yes	16.27	14.12	0.026	0.768	yes
		59000.0	0.001	0.200	yes					
		60726.0	0.001	0.200	yes					

Simultaneous Transmission

Simultaneous transmission is not considered.

Conclusion

MPE Based Exemption fulfilled

Timo Franke

B.Eng. Martin Nunier

Version	Applied changes	Date of release
R01	Initial release	2025-Feb-17
R02	Changed Referenced Documents and EIRP accordingly	2025-Mar-06