

IC: 6468A-4090HF

HVIN: PRC-4090 HF SDR transceiver

CANADA RSS-102 Issue 5 Table 4: RF Field Strength Limits for Devices Used by the General Public (Uncontrolled Environment)

							Equivalent Plane			
Frequency		Tune up tolerance			Electric Field	Magnetic Field	Wave Power	Safe Distance ³	Safe Distance	
(f)	Power (P)	(T)	Antenna Gain (G)	EIRP ¹	Strength Limit (E)	Strength Limit (H)	Density Limit ² (PD _{Limit})	(R)	(Rounded Up)	
MHz	W (PEP)	dB	dBi	W	V/m	A/m	W/m ²	m	m	
1.5	150	1.5	0	212	71.0	0.487	34.6	0.70	0.7	
10	150	1.5	0	212	27.46	0.0728	2.00	2.90	3.0	
20	150	1.5	0	212	27.46	0.0728	2.00	2.90	3.0	
30	150	1.5	0	212	24.81	0.0658	1.63	3.21	3.3	Vehicle
30	150	1.5	1.5	299	24.81	0.0658	1.63	3.82	3.9	Vehicle
30	150	1.5	5	670	24.81	0.0658	1.63	5.71	5.8	Fixed
30	150	1.5	13	4228	24.81	0.0658	1.63	14.35	14.4	Fixed
30	100	1.5	0	141	24.81	0.0658	1.63	2.62	2.7	Vehicle
30	100	1.5	1.5	200	24.81	0.0658	1.63	3.12	3.2	Vehicle
30	100	1.5	5	447	24.81	0.0658	1.63	4.67	4.7	Fixed
30	100	1.5	13	2818	24.81	0.0658	1.63	11.72	11.8	Fixed
30	30	1.5	0	42	24.81	0.0658	1.63	1.44	1.5	Manpack
30	30	1.5	1.5	60	24.81	0.0658	1.63	1.71	1.8	Vehicle
30	30	1.5	5	134	24.81	0.0658	1.63	2.56	2.6	Fixed
30	30	1.5	13	846	24.81	0.0658	1.63	6.42	6.5	Fixed

Limit 1.5-10 MHz $E=87/f^{0.5}$, $H=0.73/f$

Limit 10-20 MHz $E=27.46$, $H=0.728$

Limit 20-30 MHz $E=58.07/f^{0.25}$, $H=0.1540/f^{0.25}$

¹ $EIRP=P \times 10^{((T+G)/10)}$

² $PD_{Limit}=E \times H$

³Safe Distance $R=(EIRP/(4\pi PD_{Limit}))^{0.5}$

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FCC Table 1 to 1.1310(e)(1) Limits for Maximum Permissible Exposure (MPE)

(ii) Limits for General Population/Uncontrolled Exposure

Frequency (f) MHz	Power (P) W (PEP)	Tune up tolerance (T) dB	Antenna Gain (G) dBi	EIRP ¹ W	Equivalent Plane					
					Electric Field Strength Limit (E) V/m	Magnetic Field Strength Limit (H) A/m	Wave Power Density Limit ² (PD) W/m ²	Safe Distance ³ (R) m	Safe Distance (Rounded Up) m	
1.5	150	1.5	0	212	549.3	1.46	802	0.14	0.2	
10	150	1.5	0	212	82.4	0.219	18.0	0.97	1.0	
20	150	1.5	0	212	41.2	0.110	4.51	1.93	2.0	
30	150	1.5	0	212	27.47	0.073	2.01	2.90	2.9	Vehicle
30	150	1.5	1.5	299	27.47	0.073	2.01	3.45	3.5	Vehicle
30	150	1.5	5	670	27.47	0.073	2.01	5.16	5.2	Fixed
30	150	1.5	13	4228	27.47	0.073	2.01	12.95	13.0	Fixed
30	100	1.5	0	141	27.47	0.073	2.01	2.37	2.4	Vehicle
30	100	1.5	1.5	200	27.47	0.073	2.01	2.81	2.9	Vehicle
30	100	1.5	5	447	27.47	0.073	2.01	4.21	4.3	Fixed
30	100	1.5	13	2818	27.47	0.073	2.01	10.58	10.6	Fixed
30	30	1.5	0	42	27.47	0.073	2.01	1.30	1.3	Manpack
30	30	1.5	1.5	60	27.47	0.073	2.01	1.54	1.6	Vehicle
30	30	1.5	5	134	27.47	0.073	2.01	2.31	2.4	Fixed
30	30	1.5	13	846	27.47	0.073	2.01	5.79	5.8	Fixed

Limit 1.5-30 MHz E=824/f, H=2.19/f

¹EIRP=P×10^{((T+G)/10)}

²PD_{Limit}=ExH

³Safe Distance R=(EIRP/(4πPD_{Limit}))^{0.5}