

MPE Calculation

Applicant Garrecht Avionik GmbH
Device AC-1 VHF Air Band Radio
FCC ID 2BFFKAC1

MPE uses ERP for calculations. ERP is based on TX power added tot the antenna gain in dBi
 dBi = dB gain compared to an isotropic radiator
 S = power density in mW/cm²

		[W]	[dBm]		
	Transmitter maximum output power at 100%	7,29	38,63		Antenna gain [dBi] 1
	Duty Cycle [%]	50%	50%	dBd + 2,15 = dBi	dBi to dBd 2,15
	Output Power @ % duty cycle operation	3,645	35,61		Antenna gain [dBd] -1,15
	Calculation Power	3,645	35,61		
TX Frequency [MHz]	118,00				Antenne minus cable [dBi] 1
Cable Loss [dB]	0				
	Calculated ERP [mW]	2792,54			EIRP = Po(dBm) + Gainb (dB)
	Calculated EIRP [mW]	4581,41			Radiated EIRP [dBm] 36,61

Occupational Limit
 1,000 mW/cm²
 10,000 W/m²
 EIRP=ERP-2,15dB
 Radiated ERP [dBm] **34,46**

General Publi Limit
 0,200 mW/cm²
 2,000 W/m²

FCC radio frequency radiation exposure limits per 1.1310			
Frequency [MHz]	Occupational Limit		Public Limit
	[mW/cm ²]		[mW/cm ²]
30-300	1		0,2
300-1500	f/300		f/1500
1500-10000	5		1

FCC radio frequency radiation exposure limits per 1.1310			
Frequency [MHz]	Occupational Limit @TX freq		Public Limit @ TX freq
	[mW/cm ²]		[mW/cm ²]
30-300 [mW/cm ²]	1		0,2
30-300 [W/m ²]	10		2
300-1500 [mW/cm ²]	0,393333333		0,078666667
300-1500 [W/m ²]	3,933333333		0,786666667
1500-10000	5		1

ERP	S	S	Distance	Distance	Distance	Distance
[mW]	[mW/cm ²]	[W/m ²]	[cm]	[m]	[inches]	[Feet]
4581,41	0,009119049	0,091190486	200	2,00	78,74	6,56
4581,41	0,010104209	0,101042089	190	1,90	74,80	6,23
4581,41	0,011258085	0,112580847	180	1,80	70,87	5,91
4581,41	0,012621521	0,126215205	170	1,70	66,93	5,58
4581,41	0,014248513	0,142485134	160	1,60	62,99	5,25
4581,41	0,016211642	0,162116419	150	1,50	59,06	4,92
4581,41	0,018610303	0,186103032	140	1,40	55,12	4,59
4581,41	0,023344764	0,233447643	125	1,25	49,21	4,10
4581,41	0,036476194	0,364761943	100	1,00	39,37	3,28
4581,41	0,145904777	1,459047771	50	0,50	19,69	1,64
4581,41	0,188410094	1,884100944	44	0,44	17,32	1,44
4581,41	0,405291047	4,052910474	30	0,30	11,81	0,98
4581,41	0,911904857	9,119048567	20	0,20	7,87	0,66
4581,41	1,62116419	16,2116419	15	0,15	5,91	0,49
4581,41	3,647619427	36,47619427	10	0,10	3,94	0,33
4581,41	14,59047771	145,9047771	5	0,05	1,97	0,16

Frequency [MHz]	Occupational Limit Minimum Distance	
	[m]	[cm/inches]
30-300	0,2	20 / 8
300-1500	n/a	n/a
1500-15000	n/a	n/a

Frequency [MHz]	Public Limit Minimum Distance	
	[m]	[cm/inches]
30-300	n/a	n/a
300-1500	n/a	n/a
1500-15000	n/a	n/a