

RF Exposure Calculations

SAF Tehnika	Model: Integra-WS-24		Test Number: 170403			
MPE Calculator	MPE uses EIRP for calculation. EIRP is based on TX power added to the antenna gain in dBi.					
	dBi = dB gain compared to an isotropic radiator.					
	S = power density in mW/cm ²					
		Output Power		dBd + 2.17 = dBi	Antenna Gain (dBi)	47.1
					dBi to dBd	2.2
Tx Frequency (MHz)	24,148	Maximum (Watts)	0.002000		Antenna Gain (dBd)	44.93
Cable Loss (dB)	0.0	(dBm)	3.0		Antenna minus cable (dBi)	47.10
	Calculated ERP (mw)	62234.327			EIRP = Po(dBm) + Gain (dB)	
	Calculated EIRP (mw)	102572.277			Radiated (EIRP) dBm	50.110
		Power density (S) EIRP ----- = mW/cm ² 4 π r ² EIRP (mW), r (cm)			ERP = EIRP - 2.17 dB	
						Radiated (ERP) dBm
	Occupational Limit	FCC radio frequency radiation exposure limits per 1.1310				
5	mW/cm ²	Frequency (MHz)	Occupational Limit (mW/cm ²)	Public Limit (mW/cm ²)		
50	W/m ²	300-1,500	f/300	f/1500		
	General Public Limit	1,500-100,000	5	1		
1	mW/cm ²					
10	W/m ²					
	Occupational Limit	IC radio frequency radiation exposure limits per RSS-102				
50	W/m ²	Frequency (MHz)	Occupational Limit (W/m ²)	Public Limit (W/m ²)		
50	W/m ²	100-6,000	0.6455 f ^{0.5}			
	General Public Limit	6,000-15,000	50			
10	W/m ²	48-300		1.291		
10	W/m ²	300-6,000		0.02619 f ^{0.6834}		
		15000-150000	50	10		
EIRP	S	S	Distance	Distance	Distance	Distance
milliwatts	mW/cm ²	W/m ²	cm	meter	inches	Feet
102572.277	0.81624	8.16244	100.00	1.00	39.37	3.28
102572.277	0.90443	9.04426	95.00	0.95	37.40	3.12
102572.277	0.96437	9.64372	92.00	0.92	36.22	3.02
102572.277	0.98568	9.85683	91.00	0.91	35.83	2.99
102572.277	2.26735	22.67345	60.00	0.60	23.62	1.97
102572.277	3.26498	32.64977	50.00	0.50	19.69	1.64
102572.277	4.03084	40.30836	45.00	0.45	17.72	1.48
102572.277	4.85571	48.55706	41.00	0.41	16.14	1.35
102572.277	5.10153	51.01527	40.00	0.40	15.75	1.31
102572.277	6.66322	66.63218	35.00	0.35	13.78	1.15
102572.277	9.06938	90.69380	30.00	0.300	11.81	0.98
102572.277	13.05991	130.59908	25.00	0.250	9.84	0.82
102572.277	20.40611	204.06106	20.00	0.200	7.87	0.66
102572.277	36.27752	362.77522	15.00	0.150	5.91	0.49
102572.277	81.62442	816.24424	10.00	0.100	3.94	0.33
102572.277	326.49770	3264.97698	5.00	0.050	1.97	0.16
102572.277	8162.44244	81624.42438	1.00	0.010	0.39	0.03
		Requirement	Occupational Limit minimum Distance (meters)	Public Limit minimum distance (meters)		
		47CFR 1.1310	0.41	0.91		
		RSS-102	0.41	0.91		

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Revision 1

SAF Tehnika AS
Model: Integra-WS-24
Test #: 170403
Test to: 47CFR 15.249(b), RSS-210
File: Integra-WS-24 MPE

PMN: Integra-WS-24
FCC: W9Z-INTEGRA24W
IC: 8855A- INTEGRA24W
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Page 1 of 1