MPE Calculation page

MPE Calculator MI dBi S = Transmitter maximum Output Pc Tx Frequency (MHz) Cable Loss (dB) Calculater	Bi = dB gain c = power dens m Output pov		on TX power added to the antenna r .	121210 gain in dBi.		
Transmitter maximum Output Po Tx Frequency (MHz) Cable Loss (dB) Calculated Calculated Occupational Limit 1.00000 10.00000 W General Public Limit	Bi = dB gain c = power dens m Output pov ower for 50%	ompared to an isotropic radiator sity in mW/cm^2 wer operating at 100% (Watts)	r.	8		
Transmitter maximum Output Pe 'x Frequency (MHz) Cable Loss (dB) Calculated Calculated Cacupational Limit 1.00000 mV 10.00000 General Public Limit	= power dens m Output pov ower for 50%	tity in mW/cm^2 wer operating at 100% (Watts)				
Transmitter maximum Output Po x Frequency (MHz) Cable Loss (dB) Calculated Calculated Cacupational Limit 1.00000 mV 10.00000 W/ General Public Limit	m Output pov ower for 50%	ver operating at 100% (Watts)	12.0226			
Output Po x Frequency (MHz) Calculated Calculated Calculated Cocupational Limit 1.00000 mV 10.00000 W/ Ceneral Public Limit	ower for 50%		12.0226		Antenna Gain (dBi)	1
calculated Decupational Limit 1.00000 mV 10.00000 W/ Ceneral Public Limit		o daty Cycic operation (" atts)	6.0113	dBd + 2.17 = dBi	dBi to dBd	2.2
Calculated	127	Calcualtion power (Watts)	6.0113	GDG + 2.17 – GDI	Antenna Gain (dBd)	-1.17
Calculated Calculated Caupational Limit 1.00000 mV 10.00000 W/		Calculation power (Watts)	0.0115		Antenna Gan (dibd)	-1.17
Calculated Occupational Limit 1.00000 mV 10.00000 W/ General Public Limit	0.0	(dBm)	37.79		Antenna minus cable (dBi)	1.00
Calculated Occupational Limit 1.00000 mV 10.00000 W/ General Public Limit						
Occupational Limit 1.00000 mV 10.00000 W/ General Public Limit	ed ERP (mw)	4591.663		EIRP	P = Po(dBM) + Gain(dB)	
1.00000 mV 10.00000 W/ General Public Limit	Calculated EIRP (mw)		_		Radiated (EIRP) dBm ERP = EIRP - 2.17 dB	38.790
1.00000 mV 10.00000 W/ General Public Limit		Power density (S)			Radiated (ERP) dBm	36.620
10.00000 W/ General Public Limit	2				reactioned (Erec) distri	30.020
eneral Public Limit		EIRP				
	/m²	= mW/cm^2				
0.20000 mV		4 p r^2				
	W/cm ²	r (cm) EIRP (mW)				
2.00000 W/	/m ²	r (cm) Little (mw)				
117						
		FCC radio frequency radiation exposure limits per 1.1310				
		Frequency (MHz)	Occupational Limit	Public Limit		
		30-300 (mW/cm^2)	1	0.2		
		300-1,500 (mW/cm ²)	f/300	f/1500		
		1,500-10,000 (mW/cm^2)	5	1/1500		
		1,500-10,000 (mw/cm/2)	3	1		
		FCC radio	o frequency radiation exposure limits	ner 1 1310		
		Frequency (MHz)	Occupational Limit @ Tx Freq	Public Limit @ Tx Freq		
		30-300 (mW/cm2)	1	0.2		
		30-300 (W/m2)	10	2		
		300-1,500 (mW/cm2)	0.423333333	0.084666667		
		300-1,500 (M/m2)	4.233333333	0.846666667		
		1,500-10,000 (mW/cm2)	5	1		
		1,500-10,000 (M/m2)	50	10		
		1,500-10,000 (W/M2)	50	10		
EIRP	S	S	Distance	Distance	Distance	Distance
milliwatts	mW/cm^2	W/m^2	cm	meter	inches	Feet
7567.806	0.01506	0.15056	200.00	2.00	78.74	0.17
7567.806	0.01668	0.16682	190.00	1.90	74.80	0.16
	0.01859	0.18587	180.00	1.80	70.87	0.15
7567.806	0.02084	0.20838	170.00	1.70	66.93	0.14
	0.02352	0.23524	160.00	1.60	62.99	0.13
	0.02677	0.26766	150.00	1.50	59.06	0.13
	0.03073	0.30726	140.00	1.40	55.12	0.12
	0.03854	0.38543	125.00	1.25	49.21	0.10
	0.06022	0.60223	100.00	1.00	39.37	0.08
	0.24089	2.40891	50.00	0.50	19.69	0.04
	0.31107	3.11068	44.00	0.44	17.32	0.04
	0.37639	3.76392	40.00	0.40	15.75	0.03
	0.66914	6.69141	30.00	0.30	11.81	0.03
	1.50557	15.05567	20.00	0.20	7.87	0.02
	2.67656	26.76564	15.00	0.15	5.91	0.01
	6.02227	60.22269	10.00	0.10	3.94	0.01
	24.08908	240.89075	5.00	0.05	1.97	0.00
			Occupational Limit minimum	Occupational Limit minimum	Public Limit minimum	Public Limit minimur
		Frequency (MHz)	Distance (meters)	Distance (cm / inches)	distance (meters)	distance (cm / inches
		30-300	0.20	20 / 8	N/A	N/A
		300-1,500	N/A	N/A	N/A	N/A
		1,500-10,000	N/A	N/A	N/A	N/A

Rogers Labs, Inc. 4405 West 259th Terrace Louisburg, KS 66053 Phone/Fax: (913) 837-3214 Revision 1

Honeywell International Inc.

Model: KSN 770 Test #: 121210

Test to: FCC Parts 2, 87, and RSS-141 $\,$

File: RFExp KSN770

SN: 133

FCC ID: ASY-KSN770 Date: January 22, 2013

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Honeywell	Model: KSN 7	70	Test Number:	121210		
MPE Calculator			on TX power added to the antenna			
		compared to an isotropic radiator	•	5		
		sity in mW/cm^2				
Transmitter max		wer operating at 100% (Watts)	20.0447		Antenna Gain (dBi)	1
Output Power for 50% duty Cycle operation (Watts)			10.0224	dBd + 2.17 = dBi	dBi to dBd	
Tx Frequency (MHz)	127		10.0224		Antenna Gain (dBd)	
Cable Loss (dB)	0.0	(dBm)	40.01	I	Antenna minus cable (dBi)	1.00
	ulated ERP (mw)			EIRP	= Po(dBM) + Gain (dB)	
Calculated EIRP (mw)		12617.404			Radiated (EIRP) dBm	41.010
		Power density (S)			ERP = EIRP - 2.17 dB	20.040
Occupational Limit	2				Radiated (ERP) dBm	38.840
	mW/cm ²	EIRP				
10.00000	W/m^2	= mW/cm^2				
General Public Limit		4 p r^2				
0.20000	mW/cm ²	r (cm) EIRP (mW)				
2.00000	W/m^2	· (cm) End (mirr)				
		FCC radio	o frequency radiation exposure limits			
		Frequency (MHz)	Occupational Limit	Public Limit		
		30-300 (mW/cm^2)	1	0.2		
		300-1,500 (mW/cm^2)	f/300	f/1500		
		1,500-10,000 (mW/cm^2)	5	1		
		FCC radio	o frequency radiation exposure limits	s per 1.1310		
		Frequency (MHz)	Occupational Limit @ Tx Freq	Public Limit @ Tx Freq		
		30-300 (mW/cm2)	1	0.2		
		30-300 (W/m2)	10	2		
		300-1,500 (mW/cm2)	0.423333333	0.084666667		
		300-1,500 (W/m2)	4.233333333	0.84666667		
		1,500-10,000 (mW/cm2)	5	1		
		1,500-10,000 (W/m2)	50	10		
EIRP	S	S	Distance	Distance	Distance	Distance
milliwatts	mW/cm ²	W/m ²	cm	meter	inches	Feet
12617.404	0.02510	0.25102	200.00	2.00	78.74	0.17
12617.404	0.02781	0.27813	190.00	1.90	74.80	0.16
12617.404	0.03099	0.30990	180.00	1.80	70.87	0.15
12617.404	0.03474	0.34743	170.00	1.70	66.93	0.14
12617.404	0.03922	0.39221	160.00	1.60	62.99	0.13
12617.404	0.04462	0.44625	150.00	1.50	59.06	0.13
12617.404	0.05123	0.51228	140.00	1.40 1.25	55.12 49.21	0.12 0.10
12617.404 12617.404	0.06426 0.10041	0.64260 1.00406	125.00 100.00	1.25	39.37	0.10
12617.404	0.10041	4.01624	50.00	0.50	19.69	0.08
12617.404	0.40162	5.18627	44.00	0.30	17.32	0.04
12617.404	0.62754	6.27538	40.00	0.40	15.75	0.03
12617.404	0.98053	9.80528	32.00	0.32	12.60	0.03
12617.404	1.11562	11.15623	30.00	0.30	11.81	0.03
12617.404	1.60650	16.06498	25.00	0.25	9.84	0.02
12617.404	2.51015	25.10153	20.00	0.20	7.87	0.02
12617.404	10.04061	100.40611	10.00	0.10	3.94	0.01
		Frequency (MHz)	Occupational Limit minimum	Occupational Limit minimum	Public Limit minimum	Public Limit minimum
		r requency (IVIT12)	Distance (meters)	Distance (cm / inches)	distance (meters)	distance (cm / inches)
		30-300	0.32	32 / 12.6	N/A	N/A
		300-1,500	N/A	N/A	N/A	N/A

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