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29 June 2010

PRC-2090 HF Transceiver at 30W PEP
Prediction of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = \frac{PG}{4\pi R^2}$$

where: S = power density
 P = power input to the antenna
 G = power gain of the antenna in the direction of interest
 relative to an isotropic radiator
 R = distance to the centre of radiation of the antenna

Peak Envelope Power	30	watts
Maximum peak output power at antenna input terminal:	<u>44.77</u>	(dBm)
Maximum peak output power at antenna input terminal:	<u>30000</u>	(mW)
Antenna gain(typical):	<u>2</u>	(dBi)
Maximum antenna gain:	<u>1.585</u>	(numeric)
Prediction distance:	<u>150</u>	(cm)
Prediction frequency:	<u>30</u>	(MHz)
MPE limit for uncontrolled exposure at prediction frequency:	<u>0.200</u>	(mW/cm ²)
Power density at prediction frequency:	0.1682	(mW/cm ²)
Maximum allowable antenna gain:	2.753011231	(dBi)
Margin of Compliance:	0.753011231	



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PRC-2090 HF Transceiver at 100W PEP

Prediction of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = \frac{PG}{4\pi R^2}$$

where: S = power density
P = power input to the antenna
G = power gain of the antenna in the direction of interest relative to an isotropic radiator
R = distance to the centre of radiation of the antenna

	Peak Envelope Power	100	watts
	Maximum peak output power at antenna input terminal:	50.00	(dBm)
	Maximum peak output power at antenna input terminal:	100000	(mW)
	Antenna gain(typical):	2	(dBi)
	Maximum antenna gain:	1.584893192	(numeric)
	Prediction distance:	300	(cm)
	Prediction frequency:	30	(MHz)
	MPE limit for uncontrolled exposure at prediction frequency:	0.200	(mW/cm ²)
1.401 (W/m ²)	Power density at prediction frequency:	0.1401	(mW/cm ²)
	Maximum allowable antenna gain:	3.544823691	(dBi)
	Margin of Compliance:	1.544823691	