

Type Designation: DX-WBRDVD1  
Reference Number: 163074378

## Prediction of MPE limit at given distance

### 1. Introduction

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 center of radiation of the antenna

### 2. Limits for Maximum Permissible Exposure

According to FCC Part 1.1307, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the commission's guidelines.

According to FCC Part 1.1310 RF exposure is calculated.

#### Limits for General Population/ Uncontrolled Exposure

Limits for General Population/Uncontrolled Exposure			
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm <sup>2</sup> )
0.3-1.34	614	1.63	(100)*
1.34-30	824/f	2.19/f	(180/f <sup>2</sup> )*
30-300	27.5	0.073	0.2
300-1500	--	--	f/1500
1500-100,000	--	--	1.0

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### 3. Test result

Maximum peak output power at antenna input terminal: 19.5 (dBm)  
Maximum peak output power at antenna input terminal: 89.12 (mW)  
Prediction distance: 20 (cm)  
Prediction frequency: 2412.00 (MHz)  
Antenna Gain (typical): 1.0 (dBi)  
Power density at prediction frequency at 20 cm: 0.0223 (mW/cm<sup>2</sup>)  
MPE limit for RF exposure at prediction frequency: 1.0 (mW/cm<sup>2</sup>)

### 4. Conclusion

The equipment compliance with the MPE limits.