



U.S. Amateur Radio RF Exposure Report

20-Meter Dipole Operating at 100 Watts

20-meter dipole positioned on East side of backyard and oriented North-to-South

Roy G. Biv, W5BDB

roygbiv@pcig.net

Created: January 30, 2025

Disclaimer

The information and calculations provided by this report are intended for general informational purposes only. While we strive to ensure the accuracy and reliability of the content, we make no representations or warranties of any kind, express or implied, about the completeness, accuracy, reliability, suitability, or availability with respect to the report or the information, calculations, or related graphics contained in the report for any purpose. Any reliance you place on such information is therefore strictly at your own risk.

By using this report, you agree that:

1. **Use at Your Own Risk:** The calculations and information provided by this report are to be used at your own risk. The results and outputs generated are for informational purposes only and should not be used as a sole source of guidance for any decisions or actions related to RF exposure or any other matters.
2. **No Liability:** The publishers of this report are not liable for any loss or damage, including without limitation, indirect or consequential loss or damage, or any loss or damage whatsoever arising from loss of data or profits arising out of, or in connection with, the use of this report.
3. **Professional Advice:** This report does not replace professional advice. Users are encouraged to consult with a qualified professional for specific advice tailored to their situation.

By using this report, you acknowledge that you have read, understood, and agree to be bound by this disclaimer. If you do not agree with any part of this disclaimer, please do not use this report.

**AMATEUR RADIOPRESS**

This report is compliments of Amateur Radio Press, a "publishing imprint" of PC Information Group, Inc.



For more information, visit amateurradiopress.com and pcig.net

20-Meter Dipole Operating at 100 Watts

20-meter dipole positioned on East side of backyard and oriented North-to-South

Transmission Watts: **100.0**

Mode Duty Factor (%): **50.0**

Multi-Band Group: **MF/HF**

Band Frequency Position: **Highest**

Gain (dBi): **2.2**

Ground Reflection: **True**

Transmit Time (min.): **1.000**

Receive Time (min.): **1.000**

U.S. Amateur Radio Band (meters)	Band Transmission Frequency (MHz)	Controlled Maximum Power Density (mW/cm ²)	Controlled Compliance Distance (feet)	Uncontrolled Maximum Power Density (mW/cm ²)	Uncontrolled Compliance Distance (feet)
160	2.000	100.00	0.30	45.00	0.45
80	4.000	56.25	0.40	11.25	0.90
60	5.404	30.82	0.54	6.17	1.22
40	7.300	16.89	0.73	3.38	1.64
30	10.150	8.74	1.02	1.75	2.28
20	14.350	4.37	1.44	0.87	3.23
17	18.168	2.73	1.83	0.55	4.09
15	21.450	1.96	2.16	0.39	4.82
12	24.990	1.44	2.51	0.29	5.62
10	29.700	1.02	2.99	0.20	6.68
6	54.000	1.00	3.02	0.20	6.75

RF Exposure Computation Report

A frequency from each band in the Multi-Band Group you selected (e.g., MF/HF or VHF/UHF) has been computed. Each frequency and the computations associated with that particular frequency are displayed on individual pages in this report. For more information regarding these calculations and how to interpret them, please refer to the application's manual page at: <https://www.rfexposure.com/manual>

U.S. Amateur Band (meters): 160

FREQUENCY

* Frequency (MHz): **2.0000**

TRANSMIT-RECEIVE

* Transmit Time (min.): **1.00**

* Receive Time (min.): **1.00**

POWER

(P) Power-PEP (W): **100**

(P) Power (mW): **100,000**

(DF) Duty Factor: **0.50**

ANTENNA GAIN

(G) Antenna Gain (Numeric): $10^{(2.2 \text{ dBi}/10)} = \mathbf{1.6596}$

GROUND REFLECTION

(GR) Ground Reflection Multiplier: **0.64**

REFACTORED POWER DENSITY EQUATION FOR MINIMUM SAFE DISTANCE

(R) Radius (cm) = $\sqrt{(GR \times PE \times G) / (S \times PI)}$

CONTROLLED MINIMUM COMPLIANCE DISTANCE

Control Mode: **ControlMode.CONTROLLED**

(S) Controlled Maximum Density (mW/cm²): **100.00** (Lookup Table)

(TR) Transmit Time Ratio: **0.5000**

(PE) Power (Effective) (mW): $P \times DF \times TR = 100,000 \times 0.50 \times 0.5000 = \mathbf{25,000}$

(R) Radius (cm): $\sqrt{(GR \times PE \times G) / (S \times PI)} = \sqrt{(0.64 \times 25,000 \times 1.6596) / (100.00 \times 3.14159)} = \mathbf{9.1936}$

Minimum Compliance Distance: **9.1936 (cm)** **0.3016 (ft)** **0.0919 (m)**

UNCONTROLLED MINIMUM COMPLIANCE DISTANCE

Control Mode: **ControlMode.UNCONTROLLED**

(S) Uncontrolled Maximum Density (mW/cm²): **45.00** (Lookup Table)

(TR) Transmit Time Ratio: **0.5000**

(PE) Power (Effective) (mW): $P \times DF \times TR = 100,000 \times 0.50 \times 0.5000 = \mathbf{25,000}$

(R) Radius (cm): $\sqrt{(GR \times PE \times G) / (S \times PI)} = \sqrt{(0.64 \times 25,000 \times 1.6596) / (45.00 \times 3.14159)} = \mathbf{13.7050}$

Minimum Compliance Distance: **13.7050 (cm)** **0.4496 (ft)** **0.1370 (m)**

U.S. Amateur Band (meters): 80

FREQUENCY

* Frequency (MHz): **4.0000**

TRANSMIT-RECEIVE

* Transmit Time (min.): **1.00**

* Receive Time (min.): **1.00**

POWER

(P) Power-PEP (W): **100**

(P) Power (mW): **100,000**

(DF) Duty Factor: **0.50**

ANTENNA GAIN

(G) Antenna Gain (Numeric): $10^{(2.2 \text{ dBi}/10)} =$ **1.6596**

GROUND REFLECTION

(GR) Ground Reflection Multiplier: **0.64**

REFACTORED POWER DENSITY EQUATION FOR MINIMUM SAFE DISTANCE

(R) Radius (cm) = $\text{sqrt}((\text{GR} \times \text{PE} \times \text{G}) / (\text{S} \times \text{PI}))$

CONTROLLED MINIMUM COMPLIANCE DISTANCE

Control Mode: **ControlMode.CONTROLLED**

(S) Controlled Maximum Density (mW/cm²): **56.25** (Lookup Table)

(TR) Transmit Time Ratio: **0.5000**

(PE) Power (Effective) (mW): $P \times \text{DF} \times \text{TR} = 100,000 \times 0.50 \times 0.5000 =$ **25,000**

(R) Radius (cm): $\text{sqrt}((\text{GR} \times \text{PE} \times \text{G}) / (\text{S} \times \text{PI})) = \text{sqrt}((0.64 \times 25,000 \times 1.6596) / (56.25 \times 3.14159)) =$ **12.2581**

Minimum Compliance Distance: **12.2581 (cm)** **0.4022 (ft)** **0.1226 (m)**

UNCONTROLLED MINIMUM COMPLIANCE DISTANCE

Control Mode: **ControlMode.UNCONTROLLED**

(S) Uncontrolled Maximum Density (mW/cm²): **11.25** (Lookup Table)

(TR) Transmit Time Ratio: **0.5000**

(PE) Power (Effective) (mW): $P \times \text{DF} \times \text{TR} = 100,000 \times 0.50 \times 0.5000 =$ **25,000**

(R) Radius (cm): $\text{sqrt}((\text{GR} \times \text{PE} \times \text{G}) / (\text{S} \times \text{PI})) = \text{sqrt}((0.64 \times 25,000 \times 1.6596) / (11.25 \times 3.14159)) =$ **27.4100**

Minimum Compliance Distance: **27.4100 (cm)** **0.8993 (ft)** **0.2741 (m)**

U.S. Amateur Band (meters): 60

FREQUENCY

* Frequency (MHz): **5.4040**

TRANSMIT-RECEIVE

* Transmit Time (min.): **1.00**

* Receive Time (min.): **1.00**

POWER

(P) Power-PEP (W): **100**

(P) Power (mW): **100,000**

(DF) Duty Factor: **0.50**

ANTENNA GAIN

(G) Antenna Gain (Numeric): $10^{(2.2 \text{ dBi}/10)} =$ **1.6596**

GROUND REFLECTION

(GR) Ground Reflection Multiplier: **0.64**

REFACTORED POWER DENSITY EQUATION FOR MINIMUM SAFE DISTANCE

(R) Radius (cm) = $\text{sqrt}((\text{GR} \times \text{PE} \times \text{G}) / (\text{S} \times \text{PI}))$

CONTROLLED MINIMUM COMPLIANCE DISTANCE

Control Mode: **ControlMode.CONTROLLED**

(S) Controlled Maximum Density (mW/cm²): **30.82** (Lookup Table)

(TR) Transmit Time Ratio: **0.5000**

(PE) Power (Effective) (mW): $P \times \text{DF} \times \text{TR} = 100,000 \times 0.50 \times 0.5000 =$ **25,000**

(R) Radius (cm): $\text{sqrt}((\text{GR} \times \text{PE} \times \text{G}) / (\text{S} \times \text{PI})) = \text{sqrt}((0.64 \times 25,000 \times 1.6596) / (30.82 \times 3.14159)) =$ **16.5592**

Minimum Compliance Distance: **16.5592 (cm)** **0.5433 (ft)** **0.1656 (m)**

UNCONTROLLED MINIMUM COMPLIANCE DISTANCE

Control Mode: **ControlMode.UNCONTROLLED**

(S) Uncontrolled Maximum Density (mW/cm²): **6.17** (Lookup Table)

(TR) Transmit Time Ratio: **0.5000**

(PE) Power (Effective) (mW): $P \times \text{DF} \times \text{TR} = 100,000 \times 0.50 \times 0.5000 =$ **25,000**

(R) Radius (cm): $\text{sqrt}((\text{GR} \times \text{PE} \times \text{G}) / (\text{S} \times \text{PI})) = \text{sqrt}((0.64 \times 25,000 \times 1.6596) / (6.17 \times 3.14159)) =$ **37.0275**

Minimum Compliance Distance: **37.0275 (cm)** **1.2148 (ft)** **0.3703 (m)**

U.S. Amateur Band (meters): 40

FREQUENCY

* Frequency (MHz): **7.3000**

TRANSMIT-RECEIVE

* Transmit Time (min.): **1.00**

* Receive Time (min.): **1.00**

POWER

(P) Power-PEP (W): **100**

(P) Power (mW): **100,000**

(DF) Duty Factor: **0.50**

ANTENNA GAIN

(G) Antenna Gain (Numeric): $10^{(2.2 \text{ dBi}/10)} =$ **1.6596**

GROUND REFLECTION

(GR) Ground Reflection Multiplier: **0.64**

REFACTORED POWER DENSITY EQUATION FOR MINIMUM SAFE DISTANCE

(R) Radius (cm) = $\sqrt{(GR \times PE \times G) / (S \times PI)}$

CONTROLLED MINIMUM COMPLIANCE DISTANCE

Control Mode: **ControlMode.CONTROLLED**

(S) Controlled Maximum Density (mW/cm²): **16.89** (Lookup Table)

(TR) Transmit Time Ratio: **0.5000**

(PE) Power (Effective) (mW): $P \times DF \times TR = 100,000 \times 0.50 \times 0.5000 =$ **25,000**

(R) Radius (cm): $\sqrt{(GR \times PE \times G) / (S \times PI)} = \sqrt{(0.64 \times 25,000 \times 1.6596) / (16.89 \times 3.14159)} =$ **22.3711**

Minimum Compliance Distance: **22.3711 (cm)** **0.7340 (ft)** **0.2237 (m)**

UNCONTROLLED MINIMUM COMPLIANCE DISTANCE

Control Mode: **ControlMode.UNCONTROLLED**

(S) Uncontrolled Maximum Density (mW/cm²): **3.38** (Lookup Table)

(TR) Transmit Time Ratio: **0.5000**

(PE) Power (Effective) (mW): $P \times DF \times TR = 100,000 \times 0.50 \times 0.5000 =$ **25,000**

(R) Radius (cm): $\sqrt{(GR \times PE \times G) / (S \times PI)} = \sqrt{(0.64 \times 25,000 \times 1.6596) / (3.38 \times 3.14159)} =$ **50.0232**

Minimum Compliance Distance: **50.0232 (cm)** **1.6412 (ft)** **0.5002 (m)**

U.S. Amateur Band (meters): 30

FREQUENCY

* Frequency (MHz): **10.1500**

TRANSMIT-RECEIVE

* Transmit Time (min.): **1.00**

* Receive Time (min.): **1.00**

POWER

(P) Power-PEP (W): **100**

(P) Power (mW): **100,000**

(DF) Duty Factor: **0.50**

ANTENNA GAIN

(G) Antenna Gain (Numeric): $10^{(2.2 \text{ dBi}/10)} =$ **1.6596**

GROUND REFLECTION

(GR) Ground Reflection Multiplier: **0.64**

REFACTORED POWER DENSITY EQUATION FOR MINIMUM SAFE DISTANCE

(R) Radius (cm) = $\text{sqrt}((\text{GR} \times \text{PE} \times \text{G}) / (\text{S} \times \text{PI}))$

CONTROLLED MINIMUM COMPLIANCE DISTANCE

Control Mode: **ControlMode.CONTROLLED**

(S) Controlled Maximum Density (mW/cm²): **8.74** (Lookup Table)

(TR) Transmit Time Ratio: **0.5000**

(PE) Power (Effective) (mW): $P \times \text{DF} \times \text{TR} = 100,000 \times 0.50 \times 0.5000 =$ **25,000**

(R) Radius (cm): $\text{sqrt}((\text{GR} \times \text{PE} \times \text{G}) / (\text{S} \times \text{PI})) = \text{sqrt}((0.64 \times 25,000 \times 1.6596) / (8.74 \times 3.14159)) =$ **31.1050**

Minimum Compliance Distance: **31.1050 (cm)** **1.0205 (ft)** **0.3110 (m)**

UNCONTROLLED MINIMUM COMPLIANCE DISTANCE

Control Mode: **ControlMode.UNCONTROLLED**

(S) Uncontrolled Maximum Density (mW/cm²): **1.75** (Lookup Table)

(TR) Transmit Time Ratio: **0.5000**

(PE) Power (Effective) (mW): $P \times \text{DF} \times \text{TR} = 100,000 \times 0.50 \times 0.5000 =$ **25,000**

(R) Radius (cm): $\text{sqrt}((\text{GR} \times \text{PE} \times \text{G}) / (\text{S} \times \text{PI})) = \text{sqrt}((0.64 \times 25,000 \times 1.6596) / (1.75 \times 3.14159)) =$ **69.5528**

Minimum Compliance Distance: **69.5528 (cm)** **2.2819 (ft)** **0.6955 (m)**

U.S. Amateur Band (meters): 20

FREQUENCY

* Frequency (MHz): **14.3500**

TRANSMIT-RECEIVE

* Transmit Time (min.): **1.00**

* Receive Time (min.): **1.00**

POWER

(P) Power-PEP (W): **100**

(P) Power (mW): **100,000**

(DF) Duty Factor: **0.50**

ANTENNA GAIN

(G) Antenna Gain (Numeric): $10^{(2.2 \text{ dBi}/10)} =$ **1.6596**

GROUND REFLECTION

(GR) Ground Reflection Multiplier: **0.64**

REFACTORED POWER DENSITY EQUATION FOR MINIMUM SAFE DISTANCE

(R) Radius (cm) = $\text{sqrt}((\text{GR} \times \text{PE} \times \text{G}) / (\text{S} \times \text{PI}))$

CONTROLLED MINIMUM COMPLIANCE DISTANCE

Control Mode: **ControlMode.CONTROLLED**

(S) Controlled Maximum Density (mW/cm²): **4.37** (Lookup Table)

(TR) Transmit Time Ratio: **0.5000**

(PE) Power (Effective) (mW): $P \times \text{DF} \times \text{TR} = 100,000 \times 0.50 \times 0.5000 =$ **25,000**

(R) Radius (cm): $\text{sqrt}((\text{GR} \times \text{PE} \times \text{G}) / (\text{S} \times \text{PI})) = \text{sqrt}((0.64 \times 25,000 \times 1.6596) / (4.37 \times 3.14159)) =$ **43.9760**

Minimum Compliance Distance: **43.9760 (cm)** **1.4428 (ft)** **0.4398 (m)**

UNCONTROLLED MINIMUM COMPLIANCE DISTANCE

Control Mode: **ControlMode.UNCONTROLLED**

(S) Uncontrolled Maximum Density (mW/cm²): **0.87** (Lookup Table)

(TR) Transmit Time Ratio: **0.5000**

(PE) Power (Effective) (mW): $P \times \text{DF} \times \text{TR} = 100,000 \times 0.50 \times 0.5000 =$ **25,000**

(R) Radius (cm): $\text{sqrt}((\text{GR} \times \text{PE} \times \text{G}) / (\text{S} \times \text{PI})) = \text{sqrt}((0.64 \times 25,000 \times 1.6596) / (0.87 \times 3.14159)) =$ **98.3333**

Minimum Compliance Distance: **98.3333 (cm)** **3.2262 (ft)** **0.9833 (m)**

U.S. Amateur Band (meters): 17

FREQUENCY

* Frequency (MHz): **18.1680**

TRANSMIT-RECEIVE

* Transmit Time (min.): **1.00**

* Receive Time (min.): **1.00**

POWER

(P) Power-PEP (W): **100**

(P) Power (mW): **100,000**

(DF) Duty Factor: **0.50**

ANTENNA GAIN

(G) Antenna Gain (Numeric): $10^{(2.2 \text{ dBi}/10)} =$ **1.6596**

GROUND REFLECTION

(GR) Ground Reflection Multiplier: **0.64**

REFACTORED POWER DENSITY EQUATION FOR MINIMUM SAFE DISTANCE

(R) Radius (cm) = $\sqrt{((GR \times PE \times G) / (S \times PI))}$

CONTROLLED MINIMUM COMPLIANCE DISTANCE

Control Mode: **ControlMode.CONTROLLED**

(S) Controlled Maximum Density (mW/cm²): **2.73** (Lookup Table)

(TR) Transmit Time Ratio: **0.5000**

(PE) Power (Effective) (mW): $P \times DF \times TR = 100,000 \times 0.50 \times 0.5000 =$ **25,000**

(R) Radius (cm): $\sqrt{((GR \times PE \times G) / (S \times PI))} = \sqrt{(0.64 \times 25,000 \times 1.6596) / (2.73 \times 3.14159)} =$ **55.6764**

Minimum Compliance Distance: **55.6764 (cm)** **1.8267 (ft)** **0.5568 (m)**

UNCONTROLLED MINIMUM COMPLIANCE DISTANCE

Control Mode: **ControlMode.UNCONTROLLED**

(S) Uncontrolled Maximum Density (mW/cm²): **0.55** (Lookup Table)

(TR) Transmit Time Ratio: **0.5000**

(PE) Power (Effective) (mW): $P \times DF \times TR = 100,000 \times 0.50 \times 0.5000 =$ **25,000**

(R) Radius (cm): $\sqrt{((GR \times PE \times G) / (S \times PI))} = \sqrt{(0.64 \times 25,000 \times 1.6596) / (0.55 \times 3.14159)} =$ **124.4962**

Minimum Compliance Distance: **124.4962 (cm)** **4.0845 (ft)** **1.2450 (m)**

U.S. Amateur Band (meters): 15

FREQUENCY

* Frequency (MHz): **21.4500**

TRANSMIT-RECEIVE

* Transmit Time (min.): **1.00**

* Receive Time (min.): **1.00**

POWER

(P) Power-PEP (W): **100**

(P) Power (mW): **100,000**

(DF) Duty Factor: **0.50**

ANTENNA GAIN

(G) Antenna Gain (Numeric): $10^{(2.2 \text{ dBi}/10)} =$ **1.6596**

GROUND REFLECTION

(GR) Ground Reflection Multiplier: **0.64**

REFACTORED POWER DENSITY EQUATION FOR MINIMUM SAFE DISTANCE

(R) Radius (cm) = $\text{sqrt}((\text{GR} \times \text{PE} \times \text{G}) / (\text{S} \times \text{PI}))$

CONTROLLED MINIMUM COMPLIANCE DISTANCE

Control Mode: **ControlMode.CONTROLLED**

(S) Controlled Maximum Density (mW/cm²): **1.96** (Lookup Table)

(TR) Transmit Time Ratio: **0.5000**

(PE) Power (Effective) (mW): $P \times \text{DF} \times \text{TR} = 100,000 \times 0.50 \times 0.5000 =$ **25,000**

(R) Radius (cm): $\text{sqrt}((\text{GR} \times \text{PE} \times \text{G}) / (\text{S} \times \text{PI})) = \text{sqrt}((0.64 \times 25,000 \times 1.6596) / (1.96 \times 3.14159)) =$ **65.7342**

Minimum Compliance Distance: **65.7342 (cm)** **2.1566 (ft)** **0.6573 (m)**

UNCONTROLLED MINIMUM COMPLIANCE DISTANCE

Control Mode: **ControlMode.UNCONTROLLED**

(S) Uncontrolled Maximum Density (mW/cm²): **0.39** (Lookup Table)

(TR) Transmit Time Ratio: **0.5000**

(PE) Power (Effective) (mW): $P \times \text{DF} \times \text{TR} = 100,000 \times 0.50 \times 0.5000 =$ **25,000**

(R) Radius (cm): $\text{sqrt}((\text{GR} \times \text{PE} \times \text{G}) / (\text{S} \times \text{PI})) = \text{sqrt}((0.64 \times 25,000 \times 1.6596) / (0.39 \times 3.14159)) =$ **146.9860**

Minimum Compliance Distance: **146.9860 (cm)** **4.8224 (ft)** **1.4699 (m)**

U.S. Amateur Band (meters): 12

FREQUENCY

* Frequency (MHz): **24.9900**

TRANSMIT-RECEIVE

* Transmit Time (min.): **1.00**

* Receive Time (min.): **1.00**

POWER

(P) Power-PEP (W): **100**

(P) Power (mW): **100,000**

(DF) Duty Factor: **0.50**

ANTENNA GAIN

(G) Antenna Gain (Numeric): $10^{(2.2 \text{ dBi}/10)} =$ **1.6596**

GROUND REFLECTION

(GR) Ground Reflection Multiplier: **0.64**

REFACTORED POWER DENSITY EQUATION FOR MINIMUM SAFE DISTANCE

(R) Radius (cm) = $\sqrt{((GR \times PE \times G) / (S \times PI))}$

CONTROLLED MINIMUM COMPLIANCE DISTANCE

Control Mode: **ControlMode.CONTROLLED**

(S) Controlled Maximum Density (mW/cm²): **1.44** (Lookup Table)

(TR) Transmit Time Ratio: **0.5000**

(PE) Power (Effective) (mW): $P \times DF \times TR = 100,000 \times 0.50 \times 0.5000 =$ **25,000**

(R) Radius (cm): $\sqrt{((GR \times PE \times G) / (S \times PI))} = \sqrt{(0.64 \times 25,000 \times 1.6596) / (1.44 \times 3.14159)} =$ **76.5826**

Minimum Compliance Distance: **76.5826 (cm)** **2.5126 (ft)** **0.7658 (m)**

UNCONTROLLED MINIMUM COMPLIANCE DISTANCE

Control Mode: **ControlMode.UNCONTROLLED**

(S) Uncontrolled Maximum Density (mW/cm²): **0.29** (Lookup Table)

(TR) Transmit Time Ratio: **0.5000**

(PE) Power (Effective) (mW): $P \times DF \times TR = 100,000 \times 0.50 \times 0.5000 =$ **25,000**

(R) Radius (cm): $\sqrt{((GR \times PE \times G) / (S \times PI))} = \sqrt{(0.64 \times 25,000 \times 1.6596) / (0.29 \times 3.14159)} =$ **171.2439**

Minimum Compliance Distance: **171.2439 (cm)** **5.6182 (ft)** **1.7124 (m)**

U.S. Amateur Band (meters): 10

FREQUENCY

* Frequency (MHz): **29.7000**

TRANSMIT-RECEIVE

* Transmit Time (min.): **1.00**

* Receive Time (min.): **1.00**

POWER

(P) Power-PEP (W): **100**

(P) Power (mW): **100,000**

(DF) Duty Factor: **0.50**

ANTENNA GAIN

(G) Antenna Gain (Numeric): $10^{(2.2 \text{ dBi}/10)} =$ **1.6596**

GROUND REFLECTION

(GR) Ground Reflection Multiplier: **0.64**

REFACTORED POWER DENSITY EQUATION FOR MINIMUM SAFE DISTANCE

(R) Radius (cm) = $\sqrt{((GR \times PE \times G) / (S \times PI))}$

CONTROLLED MINIMUM COMPLIANCE DISTANCE

Control Mode: **ControlMode.CONTROLLED**

(S) Controlled Maximum Density (mW/cm²): **1.02** (Lookup Table)

(TR) Transmit Time Ratio: **0.5000**

(PE) Power (Effective) (mW): $P \times DF \times TR = 100,000 \times 0.50 \times 0.5000 =$ **25,000**

(R) Radius (cm): $\sqrt{((GR \times PE \times G) / (S \times PI))} = \sqrt{(0.64 \times 25,000 \times 1.6596) / (1.02 \times 3.14159)} =$ **91.0165**

Minimum Compliance Distance: **91.0165 (cm)** **2.9861 (ft)** **0.9102 (m)**

UNCONTROLLED MINIMUM COMPLIANCE DISTANCE

Control Mode: **ControlMode.UNCONTROLLED**

(S) Uncontrolled Maximum Density (mW/cm²): **0.20** (Lookup Table)

(TR) Transmit Time Ratio: **0.5000**

(PE) Power (Effective) (mW): $P \times DF \times TR = 100,000 \times 0.50 \times 0.5000 =$ **25,000**

(R) Radius (cm): $\sqrt{((GR \times PE \times G) / (S \times PI))} = \sqrt{(0.64 \times 25,000 \times 1.6596) / (0.20 \times 3.14159)} =$ **203.5191**

Minimum Compliance Distance: **203.5191 (cm)** **6.6771 (ft)** **2.0352 (m)**

U.S. Amateur Band (meters): 6

FREQUENCY

* Frequency (MHz): **54.0000**

TRANSMIT-RECEIVE

* Transmit Time (min.): **1.00**

* Receive Time (min.): **1.00**

POWER

(P) Power-PEP (W): **100**

(P) Power (mW): **100,000**

(DF) Duty Factor: **0.50**

ANTENNA GAIN

(G) Antenna Gain (Numeric): $10^{(2.2 \text{ dBi}/10)} =$ **1.6596**

GROUND REFLECTION

(GR) Ground Reflection Multiplier: **0.64**

REFACTORED POWER DENSITY EQUATION FOR MINIMUM SAFE DISTANCE

(R) Radius (cm) = $\text{sqrt}((\text{GR} \times \text{PE} \times \text{G}) / (\text{S} \times \text{PI}))$

CONTROLLED MINIMUM COMPLIANCE DISTANCE

Control Mode: **ControlMode.CONTROLLED**

(S) Controlled Maximum Density (mW/cm²): **1.00** (Lookup Table)

(TR) Transmit Time Ratio: **0.5000**

(PE) Power (Effective) (mW): $P \times \text{DF} \times \text{TR} = 100,000 \times 0.50 \times 0.5000 =$ **25,000**

(R) Radius (cm): $\text{sqrt}((\text{GR} \times \text{PE} \times \text{G}) / (\text{S} \times \text{PI})) = \text{sqrt}((0.64 \times 25,000 \times 1.6596) / (1.00 \times 3.14159)) =$ **91.9359**

Minimum Compliance Distance: **91.9359 (cm)** **3.0163 (ft)** **0.9194 (m)**

UNCONTROLLED MINIMUM COMPLIANCE DISTANCE

Control Mode: **ControlMode.UNCONTROLLED**

(S) Uncontrolled Maximum Density (mW/cm²): **0.20** (Lookup Table)

(TR) Transmit Time Ratio: **0.5000**

(PE) Power (Effective) (mW): $P \times \text{DF} \times \text{TR} = 100,000 \times 0.50 \times 0.5000 =$ **25,000**

(R) Radius (cm): $\text{sqrt}((\text{GR} \times \text{PE} \times \text{G}) / (\text{S} \times \text{PI})) = \text{sqrt}((0.64 \times 25,000 \times 1.6596) / (0.20 \times 3.14159)) =$ **205.5749**

Minimum Compliance Distance: **205.5749 (cm)** **6.7446 (ft)** **2.0557 (m)**