

Proposed Ephraim Modification
250 watts Channel 209

RF Worksheet #1 – FM (including translators & boosters)

PLEASE COPY BEFORE USING. THE DETERMINATION OF COMPLIANCE MAY INVOLVE REPEATED CALCULATIONS. IF LOCATED ON A MULTIPLE FM USER TOWER, PLEASE COMPLETE RF WORKSHEET 1A BEFORE PROCEEDING.

EFFECTIVE RADIATION CENTER HEIGHT

restricted

Enter proposed "height of radiation center above ground" OR as listed in Line 1 10.8m (1) 10.8m
of Worksheet 1A.

Is antenna supporting structure located on the roof of a building? (check one)

☒ Yes ☐ No (2)

If Line 2 is "Yes" enter the building height measured at the base of the antenna supporting structure in Line 3

If Line 2 is "No" enter "0" in Line 3..... 4.8 m (3) 0
Subtract Line (3) from Line (1)..... 6.0 m (4) 10.8m
Subtract the value 2.0 from Line (4)..... 4.0 m (5) 8.8m

TOTAL EFFECTIVE RADIATED POWER

(If "beam tilt" is utilized, list maximum values)

List Effective Radiated Power in the Horizontal Plane..... 0 kW (6)
List Effective Radiated Power in the Vertical Plane..... .250 kW (7) .250kW
Add Lines (6) and (7) OR list value from Line 2 in Worksheet 1A..... .250 kW (8) .250kW

PERCENTAGE OF FCC RF LIMIT(S) FOR MAXIMUM PERMISSIBLE EXPOSURE

Multiply Line (8) by 33.41 8.3525 (9) 8.3525
Multiply the value listed in Line (5) by itself..... 16 (10) 77.44
Divide Line (9) by Line (10)522 (11) .107857
Multiply Line (11) by (100) 52.2 (12) 11.0

DETERMINATION OF COMPLIANCE WITH CONTROLLED/OCCUPATIONAL LIMIT

Does Line (12) exceed 100%..... ☐ Yes ☒ No (13) NO

IF YOU ANSWERED "YES" IN LINE (13), THE WORKSHEETS MAY NOT BE USED IN THIS CASE.*

IF YOU ANSWERED "NO" IN LINE (13), THEN THE SITE SHOULD COMPLY WITH THE FCC'S CONTROLLED/OCCUPATIONAL RF EXPOSURE LIMITS FOR GROUND LEVEL EXPOSURE

*In this case, you may need to prepare an Environmental Assessment. See Instructions for Section III-C FCC Form 301.

DETERMINATION OF COMPLIANCE WITH THE UNCONTROLLED/GENERAL POPULATION LIMIT

Does Line (12) exceed 20?..... ☒ Yes ☐ No (14) NO

RF WORKSHEET #1 - FM (continued)**DETERMINATION OF COMPLIANCE WITH THE UNCONTROLLED/GENERAL POPULATION LIMIT** restrictedDoes Line (12) exceed 20% ☒ Yes ☐ No (14) NO**IF YOU ANSWERED "NO" IN LINE (14), THEN THE SITE SHOULD COMPLY WITH THE FCC'S UNCONTROLLED/ GENERAL POPULATION RF EXPOSURE LIMITS FOR GROUND LEVEL EXPOSURE. NO FURTHER STUDY REQUIRED.****IF YOU ANSWERED "YES" IN LINE (14), CONTINUE.****Rooftop with restricted access.**If you answered "yes" in Line (14) and "yes" in Line (2) (indicating that the tower is located on the roof of a building), and the general public is not allowed access to the rooftop level, repeat lines 5 through 12, entering the value in Line (1) directly in Line (4). (If Multiple FM Use Tower, recalculations should be in accordance with instructions on Worksheet #1A.) **Otherwise, go to the next section.**Upon recalculation, Does Line (12) exceed 20% ☐ Yes ☒ No (15)**IF YOU ANSWERED "YES" IN LINE (15), THE WORKSHEETS MAY NOT BE USED IN THIS CASE. *****IF YOU ANSWERED "NO" IN LINE (15), THEN THE AREA AT GROUND LEVEL SHOULD COMPLY WITH THE FCC'S UNCONTROLLED/GENERAL POPULATION EXPOSURE LIMIT. NO FURTHER STUDY REQUIRED.****Access to base of tower restricted by fencing.**If the tower is not located on the roof of a building, is the base of the tower surrounded by fencing or other restrictive barrier and are appropriate warning signs posted on the fence that adequately detail the nature of the RF exposure environment contained therein? ☐ Yes ☐ No (16)**IF YOU ANSWERED "NO" IN LINE (16), THE WORKSHEETS MAY NOT BE USED IN THIS CASE. ***

If you answered "yes" in line (16), what is the distance from the base of the

Multiply Line (9) (as calculated previously) by 5 m (17)

Subtract Line (10) (as calculated previously) from Line (18) (18)

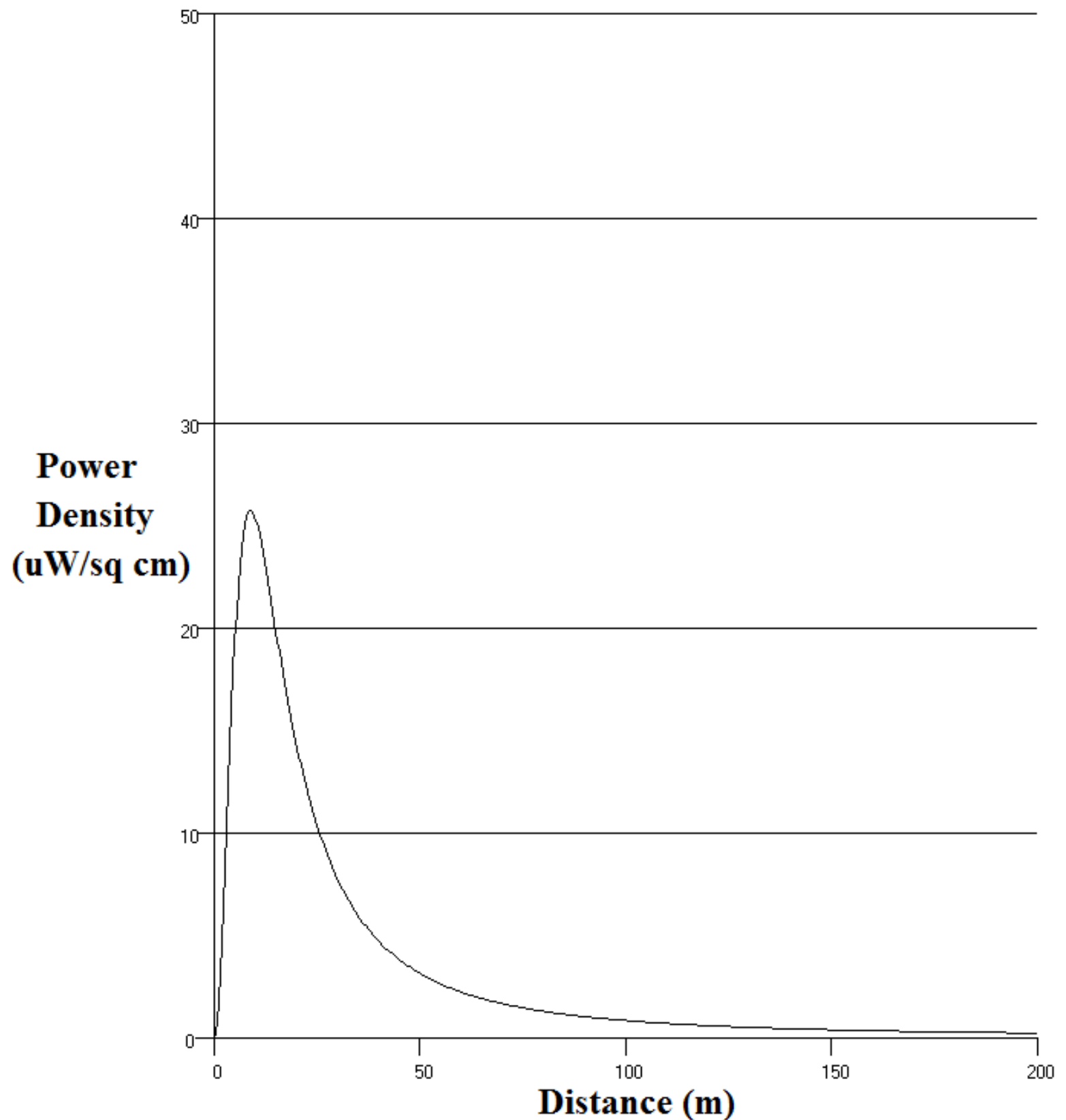
Take the square root of Line (19) (19)

Is Line (20) less than or equal to Line (17) m (20)

IF YOU ANSWERED "YES" IN LINE (21), THEN THE RF FIELD OUTSIDE THE FENCE COMPLIES WITH THE FCC'S UNCONTROLLED/GENERAL POPULATION EXPOSURE LIMIT. NO FURTHER STUDY REQUIRED.**IF YOU ANSWERED "NO" IN LINE (21), THE WORKSHEETS MAY NOT BE USED IN THIS CASE. ***

* In this case, you may need to prepare an Environmental Assessment. See Instructions for Section III-C, Item 15 of FCC Form 349.

Power Density vs Distance



Modified from FMMODEL, a program written by the FCC Office of Engineering and Technology

Distance(m):	<input type="text" value="200"/>	Antenna Type:	<input type="text" value="Vertical Dipole"/>	K210EI MOD
Horizontal ERP(kW):	<input type="text" value="0"/>	Number of Elements:	<input type="text" value="1"/>	25.7398 $\mu\text{W}/\text{sq cm}$
Vertical ERP(kW):	<input type="text" value=".25"/>	Element Spacing:	<input type="text" value=""/>	at 8.8 Meters
Antenna Height (m):	<input type="text" value="11"/>	2.6% of Occupational Limit 12.9% of General Limit		