User Guide for the ACMA RF Exclusion Zone Calculator

July 22

2009

Version 2.1
Contents

Accessing the ACMA RF Exclusion Zone Calculator ................................................................. 1
Selecting Antenna Kind and Parameters .................................................................................. 2
  Step 1: Antenna Type ........................................................................................................... 2
  Step 2: Frequency Band (MHz) .......................................................................................... 3
  Step 3: Antenna Gain (dBd) ............................................................................................... 4
  Step 4: Transmitter Power ................................................................................................. 5
Saving the Picture on Your Computer ..................................................................................... 6
More Information About the ACMA EMR Exclusion zone Calculator ....................................... 7

Figure 1: ACMA RF Exclusion Zone Calculator Website ......................................................... 1
Figure 2: Select Antenna Type ............................................................................................... 2
Figure 3: Select Frequency Band ........................................................................................... 3
Figure 4: Select Gain ............................................................................................................ 4
Figure 5: Select Transmitter Power ......................................................................................... 5
Figure 6: Picture Displayed for Selected Antenna .................................................................. 6
Accessing the ACMA RF Exclusion Zone Calculator

The ACMA RF exclusion zone calculator is a simple web based tool for determining general public RF exclusion zones around antennas. RF exclusion zones are defined as those areas where RF exposures may exceed the general public time averaged electric (E) and/or magnetic (H) reference levels specified in Table 7, section 2.4, of the ARPANSA RPS3 radiation protection standard. Compliance with these limits is specified in the ACMA radiocommunications license condition determinations for Apparatus and Temporary Community Broadcast Licenses. Note that this calculator does not generate RF exclusion zones for occupational exposure limits.

The exclusion zone calculator runs as a website tool which can be accessed via an internet browser such as Internet Explorer (5+), Firefox and Google Chrome and can be accessed from the following web address.


![Figure 1: ACMA RF Exclusion Zone Calculator Website](image)

The ACMA RF exclusion zone calculator will open as shown in Figure 1. For easy future access you can add the exclusion zone calculator to your favourite sites in your web browser.
Selecting Antenna Kind and Parameters

The input section for the tool is on the left side of the window dialog. It contains a list of input parameters that need to be specified in order to display the exclusion zones on the right.

Step 1: Antenna Type

To select the antenna type, click on the dropdown box under Antenna Type. A list of available antenna types will be displayed as shown in Figure 2. Find the antenna you wish to display exclusion zones for and then select it by clicking on it. You need to supply all the information in the subsequent dropdown boxes in order to display the exclusion zone.

![Select the Antenna kind and parameters](image)
Step 2: Frequency Band (MHz)

To select the frequency band (MHz), click on the dropdown box under Frequency Band (MHz). A list of frequency bands supported by that antenna will be displayed. Find the frequency band at which the antenna is powered and select it by clicking on it. (Figure 3) You need to supply all the information in the subsequent dropdown boxes in order to display the exclusion zone.

![Select Frequency Band](image)

Figure 3: Select Frequency Band
Step 3: Antenna Gain (dBd)

To select the antenna gain (dBd), click on the dropdown box under *Antenna Gain (dBd)*. A list of available gain configurations that are supported by the selected antenna will be displayed. Find the relevant gain and select it by clicking on it. (Figure 4) You need to supply all the information in the subsequent dropdown box in order to display the exclusion zone.

![Antenna Gain Selection](image)

*Figure 4: Select Gain*
Step 4: Transmitter Power

To select the transmitter power, click on the dropdown box under *Transmitter Power*. A range of power levels supported by the selected antenna will be displayed. Find the level at which the antenna is powered, then select it by clicking on it. (Figure 5)

![Figure 5: Select Transmitter Power](image)

A picture of the exclusion zone will be shown on the right of the window and is depicted as a yellow cylinder around the antenna. The picture also contains the dimensions of the cylindrical exclusion zone, as well as the selected parameters for the antenna (Figure 6). **Please note:** PX refers to the **Peak Envelope Power** whereas PY refers to the **Mean Power**.

The exclusion zones generated by the tool have been conservatively formulated to ensure compliance with both the E and H limits specified in the ACMA radiocommunications license condition determinations. Smaller exclusion zones may be obtained by conducting assessments by RF measurements or complex RF calculations.
Saving the Picture on Your Computer

To save the exclusion zone picture that is displayed for the selected antenna and parameters, right click on the picture and select **Save Picture As...** Then browse to the location where you want to save the picture and click **Save**. A higher resolution picture than the one displayed on the website will be saved in .PNG format at the specified location.

Alternatively, right click on the picture and select “copy image”, then paste into your preferred software application (e.g. Microsoft Word).
More Information About the ACMA EMR Exclusion zone Calculator

For more information about the ACMA EMR exclusion zone calculator and limitations on its use, please refer to the accompanying documentation on this web site.

The ACMA EMR exclusion zone calculator was developed by:

Dr. Vitas Anderson (Swinburne University of Technology, Melbourne, Australia)
Marnus van Wyk (EMSS Consulting (Pty) Ltd, Stellenbosch, South Africa)
Francois du Plessis (EMSS Consulting (Pty) Ltd, Stellenbosch, South Africa)
Ben Bosch (EMSS Consulting (Pty) Ltd, Stellenbosch, South Africa)