

AGTC_lite_V2-01.xls ***AGTC_lite_V2-01.xlsx***

About

The *AGTC_lite_V2-01.xlsx* has been written in MS Excel, French vers. 14.0.7173.5000 (32 bits), win 7. An Excel 97 - 2003 version is also available (extension *xls*).

Decimal Separator

Using individual regional settings holds the challenge of engaging differing decimal separators, "." or ",". When opening the files with an English version of MS Excel/Windows, the commas must be automatically replaced by dots.

Setting antenna tilting angle / alpha, T_Sky, T_Earth

The cells that can be edited are:

- M2, the alpha angle (antenna tilting angle) in degrees,
- K8, the Sky Temperature in K,
- L8, the Earth Temperature in K,
- F5 to F65345, which hold the 65,341 values of the FF Tables Tot dB for a step size of 1 degree.

The rest of the working sheet is protected.

In case you wish to edit any other cells: the password is just <Return>.

Be very careful: there are no validity checks on your entries!

The first 4 lines are locked with the Freeze Panes command.

Validations

The Average Gain is casted to cell Q10 and is computed for each alpha value.

It must stay constant whatever the alpha value is.

However, if this gain is > 0.999, the T_Loss (cells N22 or L30) is set to 0 K in order to prevent it from falling into a small negative absolute temperature due to the step 1 degree sampling.

"Local Average Gain" is the average gain computed for the given angle alpha, whereas the common Average Gain is computed at alpha = 0 degree.

Cells Q16 and Q17 must be strictly equal.

If they are it is a kind of validation.

How to feed an FFTab file into this MS Excel

Use the *azel_V1-01.bas* program. It asks you the FFTab file name and the Tot_dB decimal separator ("mark") you need for your PC: a "dot" or a "comma". Just enter your choice.

The program generates a *.txt* file where each line contains only 1 data: a Tot_dB value.

These lines are sorted in the right way:

- Azimuth increasing (from 0 to 360 deg.),
- Elevation decreasing (from +90 to -90 deg.).

Open this *.txt* file in Excel, copy cells A1 to A65341 into cells F5 to F65345 of *AGTC_lite_V2-01.xlsx* or *AGTC_lite_V2-01.xls*.

Remember: there are no validity checks on these entries ...

If for any reason the Tot_dB decimal separator is not the right one, do the correction as a whole with the classical <Ctrl>F shortcut.

Specific Notes on entered numbers and computed results

Then proceed by entering the user specific data for the analysis:

M2 = alpha, K8 = T_Sky, L8 = T_Earth

Confirm your entries pressing <Return>.

The results are casted to the dedicated cells as:

Q10: Local Average Gain (/) = numerical
R10: Local Average Gain (dB)
N14: max Gain (dBi)

J30: alpha (deg.)
K30: T_pattern (K)
L30: T_loss (K)
M30: T_total (K)
N30: G/T (dB)

K10: total Sky area (zone)
L10: total Earth area (zone)
N10: total area (zone)