Package "nslcoveragemap"

Description:

The package "nslcoveragemap" consists of several single script files. The user can configure settings for the coverage map and take location-dependent level measurements with distinct color-coding. The coverage map level measurements can be saved in CSV file format to be viewed later or to be converted into KML format for geographical data display.

How it works:

The package "nslcoveragemap" works as follows:

1. The "cmapsettings.py" script is used for basic settings of the coverage map in a dialog window, i.e. the point distance in meters, the trace and its measurement unit, the file prefix and file path for generated CSV and KML files, the path to the maps, etc. Additionally, the color-coding can also be defined in the settings dialog against different signal levels. These settings are saved in the "cmap_settings.json" file in the project directory.

2. The script "cmap.py" reads the coverage map configuration settings from the "cmap_settings.json" file, takes location-dependent level measurements, saves them in a CSV file, and displays the measurement results as colorcoded levels on the map inside the display dialog. The dialog also allows other functionalities like zooming the map in and out, or drag to a certain location. Additionally, the user can save the measurements as a PNG image as well.

3. The script "cmapview.py" takes the saved coverage map level measurements in a CSV format (generated by the script "cmap.py") and displays them on a map inside the display dialog. The color-codes of the level measurements are shown in the side-bar of the dialog for a direct reference. Other functionalities like zooming the map in and out, and saving the color-coded level measurements on map as PNG image are also provided inside the dialog.

4. The script "convcmapkml.py" prompts the user to select a CSV file (generated by the script "cmap.py") and converts the coverage map measurements to KML format for geographical data display, e.g. in Google maps.
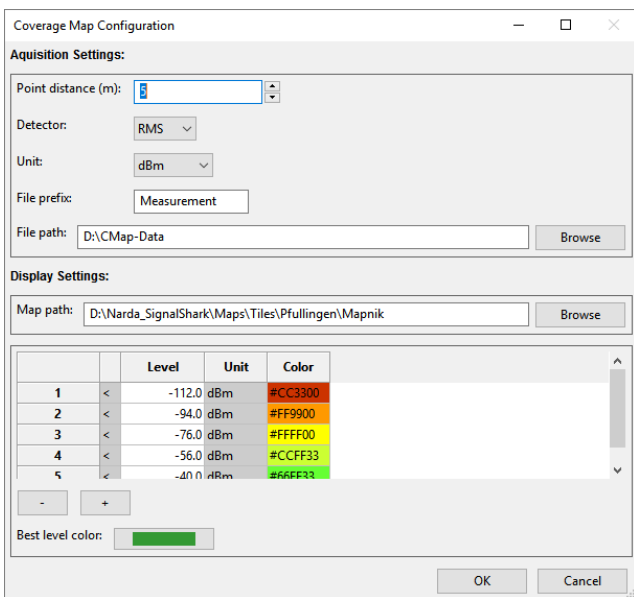
Procedure

Coverage Map Settings

1. Open the Narda Script Launcher application and select the "nslcoveragemap" tab.
2. Select the script "Coverage Map Settings".

3. When the script is executed, a dialog box opens that asks the user to configure settings like the point distance in meters, detector trace, unit, file prefix, etc., as shown below:


4. Select the "File path" where you want to save the output files.

5. Select the "Map path" to point to the directory containing all maps.
6. The signal levels and corresponding color codes are already mentioned in the dialog grid. However, the – and + buttons can be used to add or delete points manually as per the user need.
7. Press "OK" to apply settings and terminate script.
8. The applied settings can be found in "cmap_settings.json" file in the project directory

CMap Level Measurements

9. Open the Narda Script Launcher application and select the "nslcoveragemap" tab.
10. Select the script "Coverage Map".
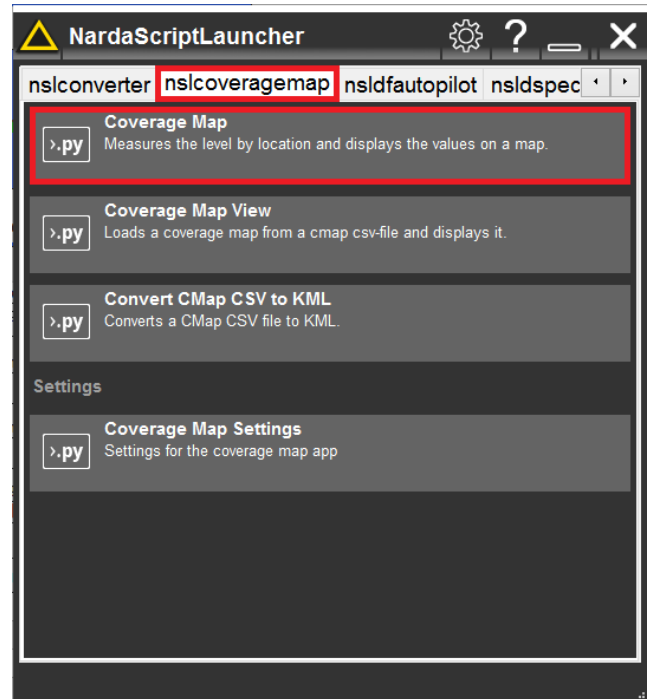
11. The user can add comments for the measurements, however, it is an optional field.
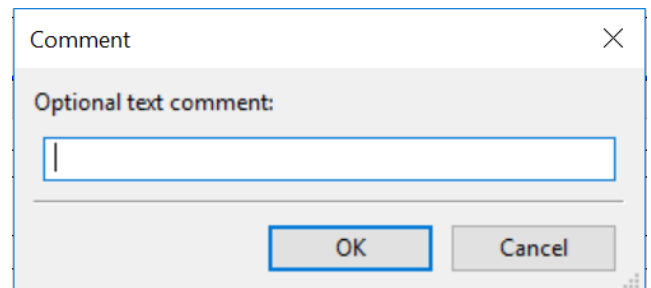
The optional comments can be viewed in the csv file generated at the end of this script.
12. Press "OK" to continue.

13. A dialog appears with color-coded level measurements for each location on the map. The script imports the settings for coverage map from the json file generated in the previous step "cmap_settings.json". The color codes from the settings file appear in the top-right corner of the dialog.
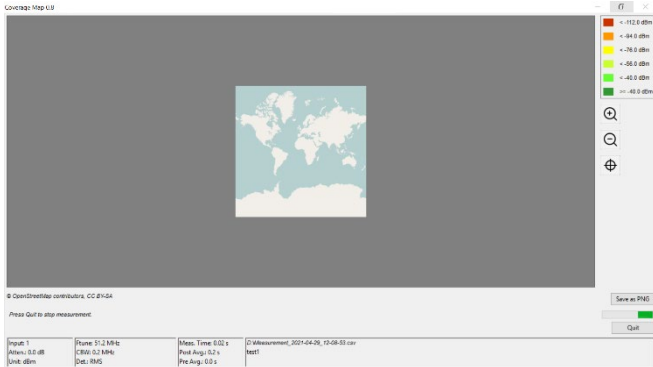

14. The map can be zoomed in or out, and can also be saved as an image using the button "Save as PNG".

15. Press "Quit" to abort the measurements at any time.

16. The csv file with the measurement data can be found in the "File path" set in step 4 of the settings script.

View Coverage Map

17. Open the Narda Script Launcher application and select the "nslcoveragemap" tab.

18. Select the script "Coverage Map View".
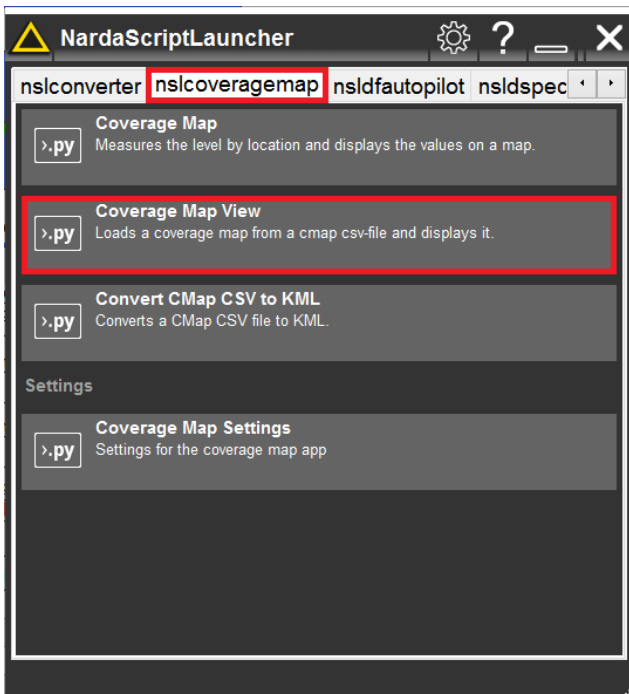
19. The script opens a dialog for the selection of csv file containing coverage map data to be viewed. Select the file and press the "Open" button.
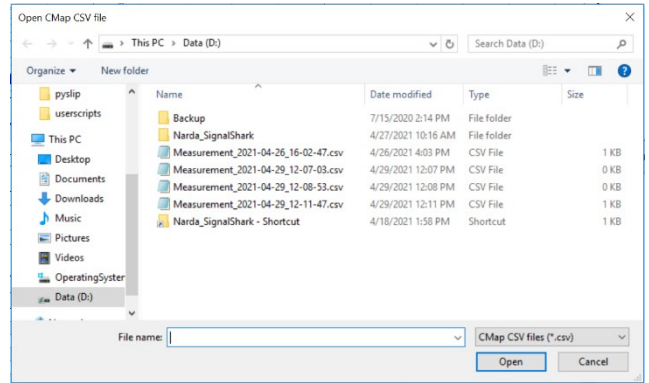

20. The script reads the CSV file and plots the level values on the map in the viewing dialog:
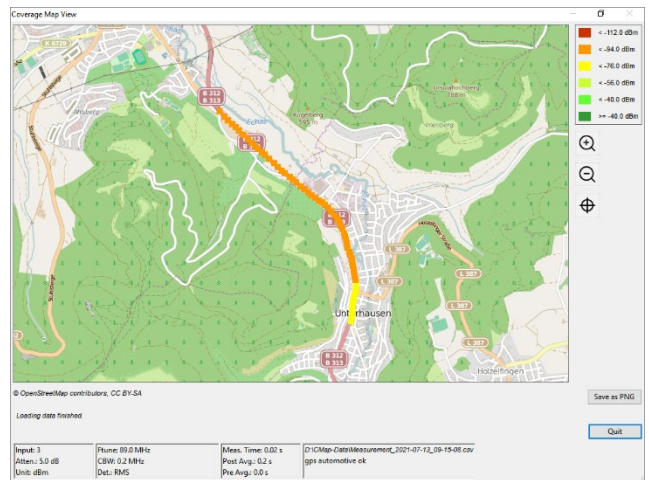
21. The map can be zoomed in and out to view specific areas on the map.

22. The "Save as PNG" button can be used to save the coverage map as an image.

23. Press "Quit" button to abort the measurements at any time.

Convert Coverage Map

24. Open the Narda Script Launcher application and select the "nslcoveragemap" tab.

25. Then select the script "Convert CMap CSV to KML".
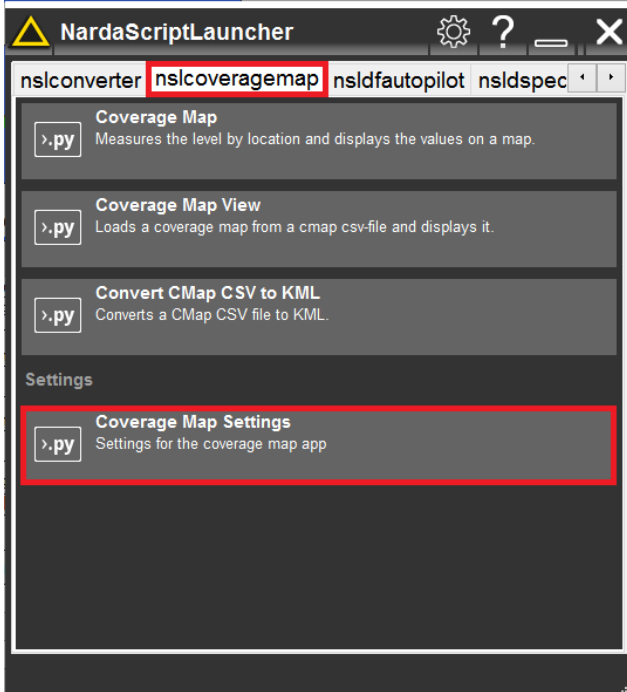
26. The script opens a dialog for the selection of csv file containing coverage map data to be converted to KML format. Select the file and press the "Open" button.
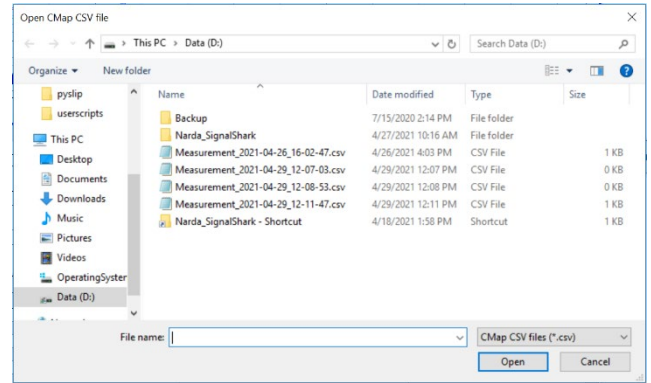
27. A progress dialog is shown while the script converts the CSV file to KML file format:
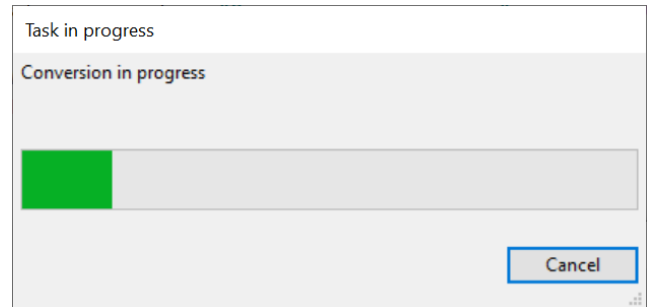
28. A conversion done dialog is prompted as soon as the conversion is completed:
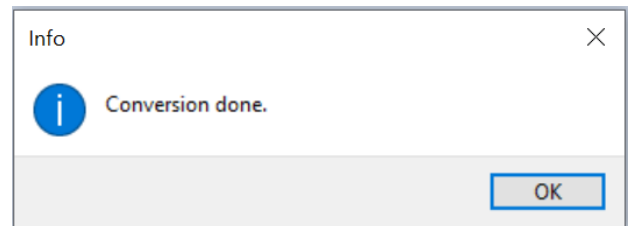
29. Click "OK" to terminate the script

30. The KML file can be found in the file path set in the step 4 of the settings script.