# **Probe 5**<sup>TM</sup> R.F. Propagation Prediction Software

> 80.0 dBu\
60.0 - 80.0
50.0 - 60.0
40.0 - 50.0



Probe 5<sup>™</sup> FM Longley-Rice Coverage Study

Probe  $5^{\text{TM}}$  is designed to have all the tools you will ever need for predicting radio propagation in the 20 to 20,000 MHz frequency range. The WYSIWYG interface allows you to produce maps of any size with user configurable labels, legends, and map scales.

This new version is designed to handle the simplest to most difficult propagation prediction studies for FM, TV and DTV. Probe 5 features numerous propagation models including standard FCC, Longley-Rice, NSMA OHLOSS, Okumura/Hata/Davidson and COST-231/Hata, point-to-point path analysis, line of sight/shadow, the FCC's PTP and PTP2 methods. ITU models are also available.

Probe 5 uses a unique geographic mapping engine that combines the best polygon graphics with precision coordinate information, map projections and USGS topographic maps. The program produces stunning output, with appearances that rival even the best of the atlas makers. Features such as highway colors, line thickness, road markers, city names, lake and ocean colors, font names and sizes are fully selectable. The user can configure every aspect of Probe 5's maps right down to the street level to give them that perfect look.

Single or multiple station coverage studies, incoming or outgoing interference, D/U ratio, and DTV OET-69 analysis are available for user selection. For interference studies,

FCC Contours on a Topographic Base Map

Probe 5 automatically identifies stations to which interference is caused as well as those stations that cause interference.

Probe 5 can use the finely detailed FCC 30 meter terrain elevation data base, our latest 3 arc-second terrain database based on satellite corrected National Elevation data, USGS and SRTM 3 arc-second databases, and several of our 30 arc-second terrain databases. Earth-wide coverage prediction is also available using our world terrain elevation and mapping databases.

Signal values can be examined down to the street level, including street names. Custom tick-marks can be added by street address or by using a set of latitude and longitude coordinates. Color maps in the PDF format can be produced directly or output as graphic files, such as BMP, JPEG, & GIF. Other geographic data output formats supported include SHP, MIF, KML, and KMZ.

For coverage and interference analysis, Probe 5 includes high resolution; block level, decennial U.S. Census population data. Mexico, Canada, and world population databases are also available.

Probe 5 contains a complete set of editing tools for adding text and other information to maps. It comes packaged with mapping data and the latest TV, DTV and FM FCC engineering databases with directional antenna patterns.

## V-Soft Communications - The Leader in Broadcast Engineering Software



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#### **Basic Level**

The basic level of Probe 5 is an affordable tool for plotting coverage. This level provides the user with the ability to perform detailed Longley-Rice and FCC contour coverage studies. It comes with the latest decennial U.S. Census database for basic population reports and a land cover database for coverage studies. An antenna pattern editor is part of basic package as well.

The WYSIWYG mapping and selectable map scales makes mapping with Probe 5-Basic simple and pleasing to the eye. Colors and font sizes are user defined for custom map making. Navigating the FCC database for existing stations is easy with the program's extensive database searching capabilities.

Probe 5-Basic is an affordable program for users looking for an excellent cost-effective solution to coverage mapping needs. The Longley-Rice map on the left was created using Probe 5-Basic. The basic level can be upgraded at any time to the next standard level.

## Standard Level

Probe 5-Standard includes all the features of the basic level, and more. In addition to coverage studies, the standard level performs Longley-Rice FM interference studies. After the reference station is determined, the program automatically searches the FCC database for interference and plots the interference signal areas on a map (see incoming interference study graphic on reverse page).

Probe 5-Standard also includes a profile viewer to analyze path profiles using the selected terrain database. An FCC database culling engine allows advanced searches by call sign, state, city, licensee, or stations within a certain distance from a reference point. The detailed population reports include county, racial, and housing figures based on U.S. census information.

Additional features in the standard version are street level roads, gradient shading for Longley-Rice coverage, Delta h calculation, Okamura/Hata/Davidson and PTP1 propagation models. Upgrades to the professional level are available.





## **Professional Level**

The professional level of Probe 5 offers top-of-the line propagation prediction tools for the most demanding needs. Map backgrounds can be selected from rasterized topographic maps to the V-Soft shape maps. Among the many powerful Probe 5-Professional features is a capability that allows the user to plot city boundary polygons and to show the extent of coverage to the city. To do this Probe 5 uses a contour/polygon overlap tool that automatically finds the area of overlaps, shades them, and counts population and area within those regions.

The D/U study in Probe 5-Professional allows the user to choose the "desired" and "undesired" stations, define the D/U ratios, and set the minimum signal threshold. Antenna pattern directivity can also be evaluated. Other tools include census density, terrain, and land cover backdrops, Longley-Rice urban clutter factor, NSMA OHLOSS Propagation Model and more.



For more information on this or one of our many products, please visit our website at <u>www.V-Soft.com</u> or call us at (800) 743-3684.