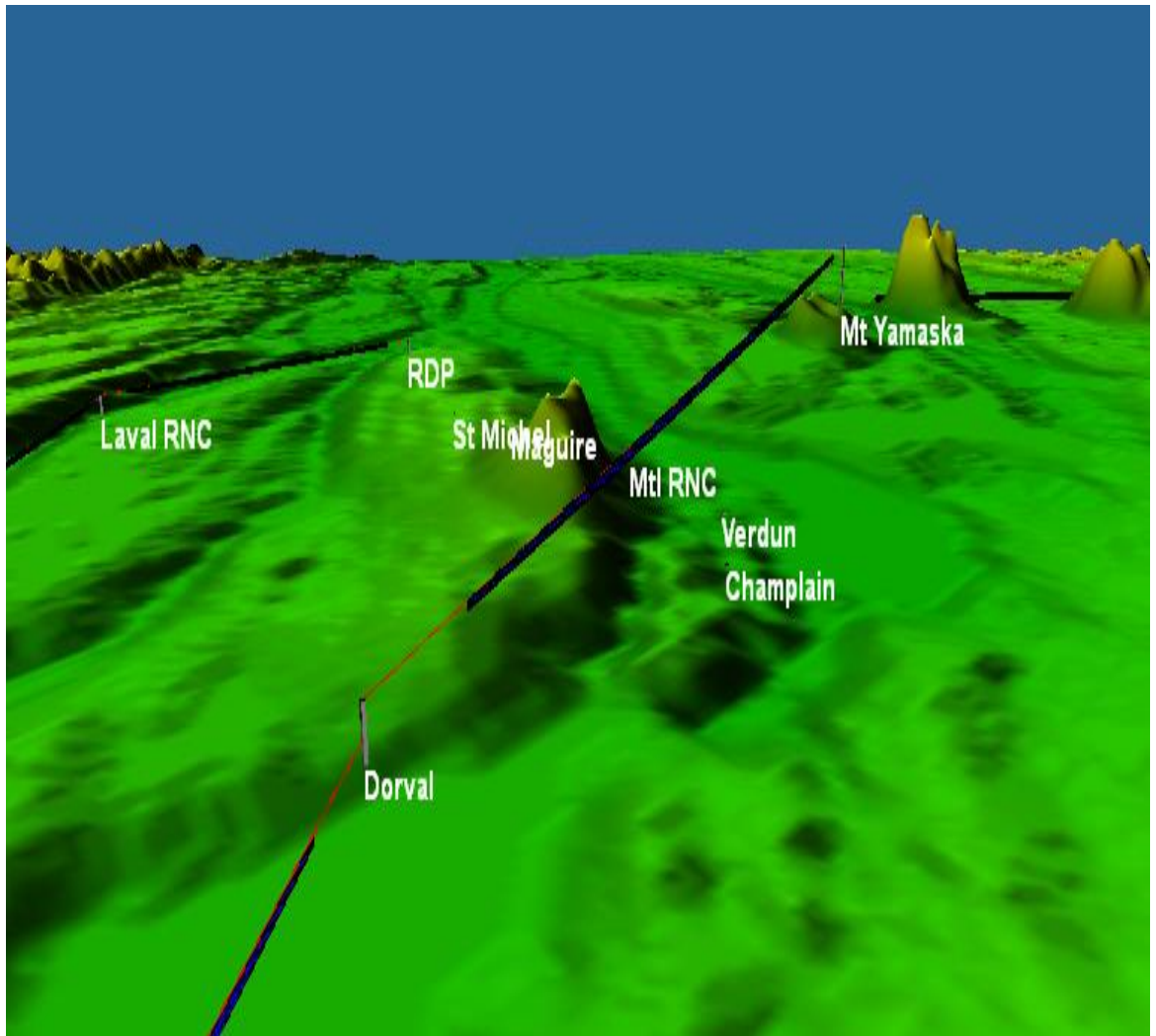


Pathloss 5 Training



COVERAGE AND POINT-TO-MULTIPOINT (PTMP) SOFTWARE OPERATION (PL5-04)

3 Day Training

**FOR MORE
INFORMATION**

Yves R. Hamel et Associés Inc.
102-424 Guy Street
Montreal (QC) Canada
H3J 1S6

Tel.: 514-934-3024
Fax: (514) 934-2245
Email: telecom@yrh.com



PATHLOSS

Microwave communication network design can be a complex and sometimes daunting task. Fortunately, engineers and technicians working on MW network planning can use software tools such as Pathloss to ensure a methodical and thorough approach to their task.

The Pathloss program is a state-of-the-art comprehensive path design tool for networks operating in the frequency range from 30 MHz to 100 GHz.

Designed for use throughout the world with diverse equipment and wide-ranging atmospheric conditions, Pathloss uses a variety of terrain and clutter databases, equipment files and local weather files.

The program is organized into modules, covering all aspects of microwave communication network design. These include five path design modules. The network module, which integrates the radio paths and several operations that can be performed on a given network including: interference analysis, automatic link generation design, point to multipoint design, and local and area coverage studies.

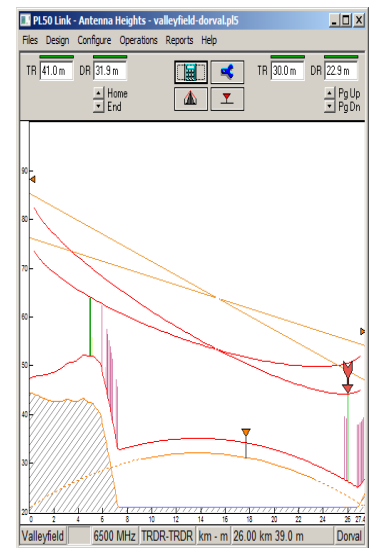
OBJECTIVES

The goal of this training session is to develop knowledge and skills of the PTMP and coverage aspects of the Pathloss software. The new version of Pathloss has improved significantly; changing the way we work with it. Therefore, a specific course has been developed in order to help network designers learn the concepts and develop a methodology for the Pathloss 5 software. Applications in the lower Land Mobile (P25, Tetra...) frequencies as well as OFDMA applications such as WiMax will be discussed.

The training covers a variety of topics, ranging from software installation and upgrade to a module-by-module study and network designs and operations.

TARGET AUDIENCE

Although Pathloss is a comprehensive step-by-step design tool, this YRH Pathloss training is specifically targeted to engineers and experienced technicians having some basic notions of microwave and RF propagation.



PRE-REQUISITES

Thorough knowledge of RF communication networks required.

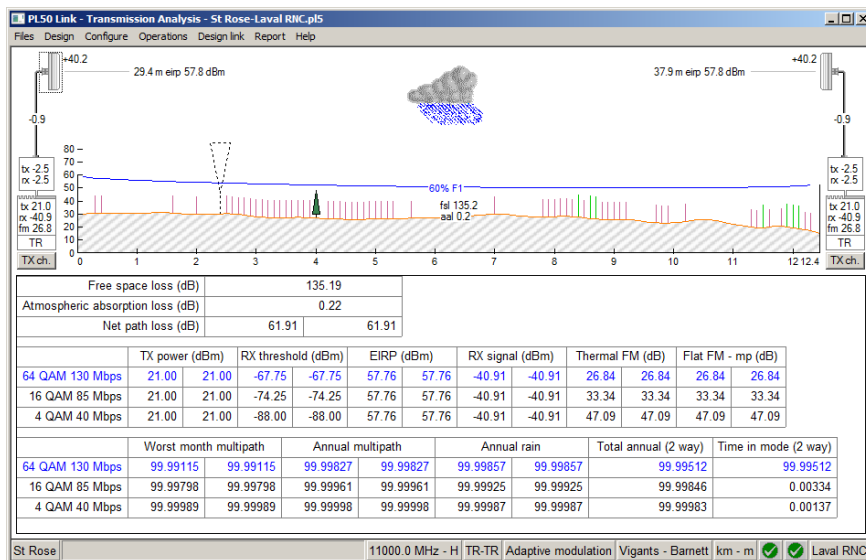
ADDITIONAL PATHLOSS 5 TRAINING PACKAGES

- ☞ Pathloss 5 - 4 days: Microwave theory and complete Point-to-Point (PTP) software operation (PL5-01)
- ☞ Pathloss 5 - 3 days: Complete Point-to-Point (PTP) software operation (PL5-02)
- ☞ Pathloss 5 - 2 days: For experienced PL4 users (PL5-03)
- ☞ Pathloss 5 - 5 days: Full Pathloss 5 operation including microwave theory, PTP, PTMP and coverage applications (PL5-05)

SCHEDULE AND FEES

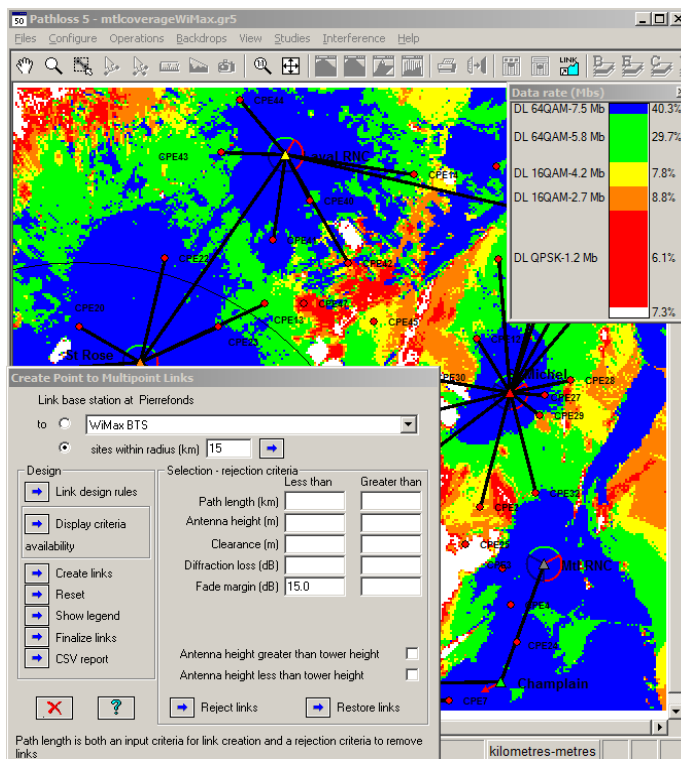
For more information about our Pathloss training program, please e-mail us at telecom@YRH.com or call at +1 514.934.3024.

PATHLOSS 5 FEATURES



Adaptive modulation calculations

Coverage and automatic PTMP link planning tools



COURSE CONTENTS

DAY 1

- **Software Installation and maintenance updates**
- **Overview of Software files**
- **Network Options and Settings**
 - + Site and Link data entry
 - + Group Manager
 - + GIS setup
 - + Network display options

Exercise:

 - *Create a Network consisting of existing links and new sites*
- **Link Options and Settings**
 - + Default calculation methods and algorithms
 - + Program Options

Exercises:

 - *Setting default calculation and diffraction loss methods and algorithms*
 - *Setting default clearance criteria*
- **Equipment Files Formats and Setup**
 - + Setting Equipment databases and Frequency Plans
 - + AntRad Program: Creating and editing radio and antenna files

Exercises focussing on WiMax or Land Mobile (VHF-UHF) applications:

 - *How to configure equipment database and Frequency Plans*
 - *How to create Radio files using the AntRad program*
- **Base Station Creation**
 - + Creating Base Stations individually or as a batch
 - + Adding Base Station and Mobile Specifications

Exercise:

 - *Creating WiMax and/or Land Mobile (VHF-UHF) Base stations*

DAY 2

– Terrain Data Module

- + Generating terrain profile between two sites
- + Inserting and editing Clutter and Structures

Exercises:

- *How to generate a terrain profile*
- *How to input obstacles manually or using clutter files*

– Diffraction Loss Module

- + Calculating diffraction loss
- + Analyzing the Automatic and Manual Diffraction Algorithms

Exercise:

- *Calculate and compare diffraction loss from manual and automatic methods*

– Transmission Analysis Module

- + Different ways of entering equipment parameters
- + Setting parameters for all applications: Microwave, Adaptive Modulation, Land Mobile
- + Selecting calculation methods and algorithms

Exercises:

- *Analyze a path using ITU Multipath fading algorithms*
- *Analyze a path using Vigants-Barnett Multipath fading algorithms*
- *Analyze a path using the Adaptive Modulation Application*
- *Analyze a path using the Land Mobile application*

DAY 3

– Coverage (Local and Area Studies):

- + Terrain and Clutter loss considerations
- + Propagation Parameters
- + Local and Area studies
- + Display criteria

Exercises:

- *Local and Area Coverage of a network*
- *Identifying marginal coverage areas and resolving coverage issues*

– Automatic Point-to-Multipoint Link Generation and Design

- + Network design of PTMP links
- + Link Design Rules
- + Create PTMP links
- + Design and modify PTMP links
- + Frequency assignment

Exercise:

- *Automatically create WiMax and/or Land Mobile (VHF-UHF) PTMP links*

– Interference

- + Setting Intra-System Interference Parameters
- + Correlation options
- + Reading and analyzing Interference reports

Exercises:

- *How to perform an intra-system interference calculation*
- *How to solve potential cases of interference using several methods*

– Network Batch Reports

- + Batch and performance reports
- + Export to csv, Google Earth and MapInfo

– Question period and review of modules of particular interest

– Overview of additional possibilities

- + Antenna Heights
- + Multipath and Reflections
- + Passive repeaters