

HOMER Autotuner Training Course

This is a tentative maximalistic program proposal with estimated times. Anything, including timing, can be changed, some topics skipped, other added depending on your preferences and the situation as it evolves. The presentation slides are in English.

Day 1

- 08:00 – 09:00 Preparation, unpacking and installation of equipment
- 09:00 – 13:00 Theoretical Part 1 - Hardware**
- 09:00 – 10:00 Theoretical introduction:
- Waves, scattering parameters and derived quantities
 - Measurement of scattering parameters
- 10:00 – 11:30 Homer Analyzer
- Principle of operation
 - Calibration
 - Measurement accuracy
 - Handling complex signal waveforms
 - Remote control of Homer
- 11:30 – 12:00 Impedance matching
- Why impedance matching?
 - Basic theory
- 12:00 – 13:00 Homer Autotuner
- Principle of operation
 - Basic properties (matchable range, matching accuracy, matching speed)
 - Maximal working power, arcing, radiation leakage
 - Optimal matching under complex signal conditions
 - Stub swapping problem
- 13:00 – 13:30 Break**
- 13:30 – 18:00 Theoretical Part 2 - Software**
- 13:30 – 14:30 Firmware
- Important files residing inside Homer. Servers
 - Server operation basics
 - Configuration files: defining autonomous Homer operation
 - Hom.cfg and Tun.cfg configuration files. Running status, Sending status
 - Methods of configuration files modification
 - Communication with external controllers (PC, PLC) via RS232 and CAN Bus
- 14:30 – 16:00 HomSoft Windows Control and Visualization Software
- Help step by step
 - Menus step by step
 - Run, Stop Monitoring, Stop Homer
 - Saving data. Data logging
 - CW, Rectified and Pulsed modes of sampling. Displaying Waveforms
 - Homer simulation program HoSim. Customizing HoSim to act as your Homer

- 16:00 – 16:30** **Break**
- 16:30 – 18:00 SW installation, upgrades, file manipulation
- Distinction between Firmware and HomSoft and their relation
 - Other Windows tools: HomTool, RsMon, CanMon
 - Transferring files. Modifying Hom.cfg and Tun.cfg configuration files
 - Homer Resets
- Homer problems reporting
- Functionality check without additional equipment
 - Test bench: Enhanced functionality check
- Overview of available literature and other resources

Day 2

- 09:00 – 13:00** **Practical Training**
- SW installation, SW upgrading, file manipulation
Data sampling and data logging
(Probably skipped: Waveform determining)
Modifying configuration files
- 13:00 – 13:30** **Break**
- 13:30 – 15:00** **Practical Training – Continued**
- 15:00 – 17:30** **Process Analysis (when required and possible)**
- Evaluation measurements on user's installations: determining signal waveforms and reflection coefficients, finding optimum Homer settings, observing, evaluating and possibly solving problems.
Any other work requested.
- 17:30 – 18:00** **Break**
- 18:00 – 19:00** **Discussion, Any Other Business**
- Discussion about any other problems and questions
Conclusion

Equipment to be Prepared in Advance

If the course is held at the user's premises, these are the main items which should be prepared in advance so that no time is lost after our arrival.

- Conference room
- Desk for our equipment
- Data projector + data cable with Display Port or VGA connector at PC end.

Attendees can use their own PCs for the practical training. They may wish to pre-install the latest version of HomSoft (downloadable from http://s-team.sk/software_download.php), or we can guide them doing so as the first step of the practical training.