

DISTRIBUTION SYSTEM ANALYSIS

Harmonic Analysis

Contingency Analysis

Reliability Assessment

Substation Analysis

Secondary Networks

And more...

CYMDIST(HARMO), Harmonic Analysis Module

CYMDIST (HARMO) is an add-on module to CYMDIST designed to perform harmonic penetration analysis in electric distribution systems.

CYMDIST(HARMO) features a number of analyses, including frequency scan, voltage distortion and current distortion calculations on balanced and unbalanced systems. CYMDIST-HARMO allows the user to easily detect resonant frequencies due to capacitor banks, and to model non-linear loads and other sources of harmonic currents such as converters and arc furnaces. With these capabilities, it is possible to evaluate the impact of these non-linear loads on your distribution network.

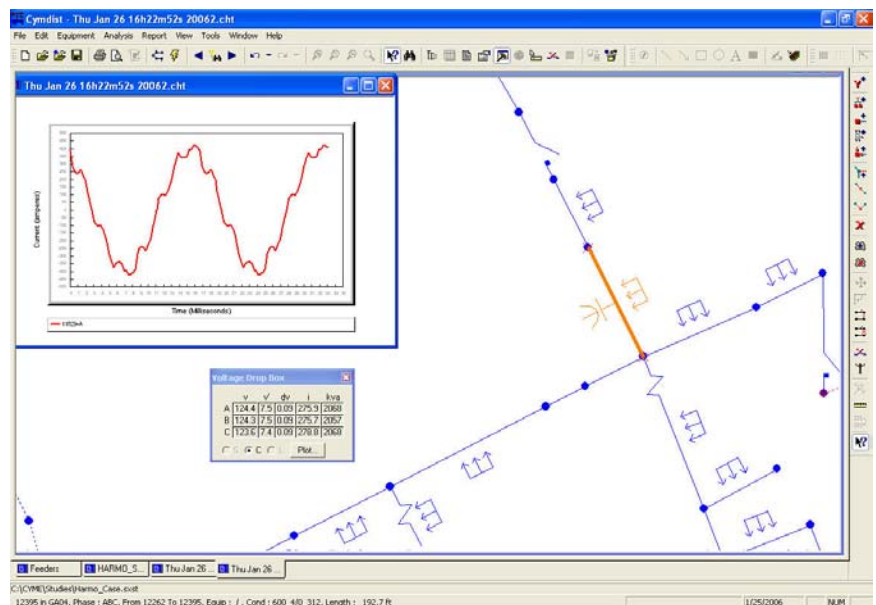
It is specifically designed for utility-type grids and distribution feeders of any configuration.

CYMDIST (HARMO) utilizes state of the art sparse matrix/vector methods with a three-phase nodal admittance network matrix representation.

The frequency scan can be performed at any joint of a feeder by simply selecting the desired section directly in the one-line-diagram and running the analysis.

CYMDIST (HARMO) allows the users to model multiple types of harmonic sources to compute the effectiveness of filters and modify them at will in order to attain acceptable level of harmonic distortion on your network:

- Ideal and non-ideal converters
- Arc furnaces
- Single-tuned and double-tuned filters
- C-Type filters
- High-pass filters
- User-defined shunt single and multi frequency current sources



Analytical Capabilities

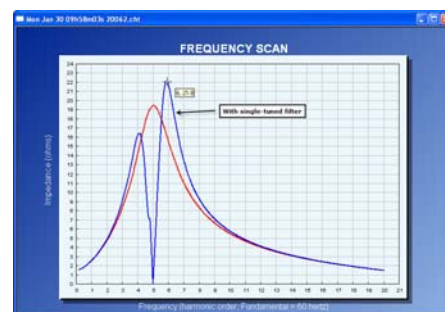
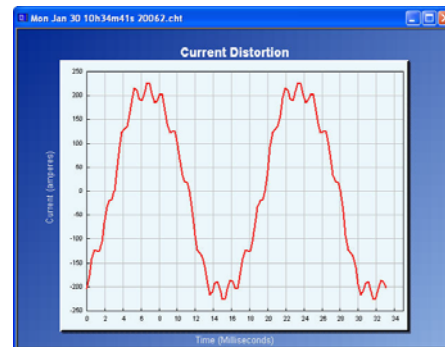
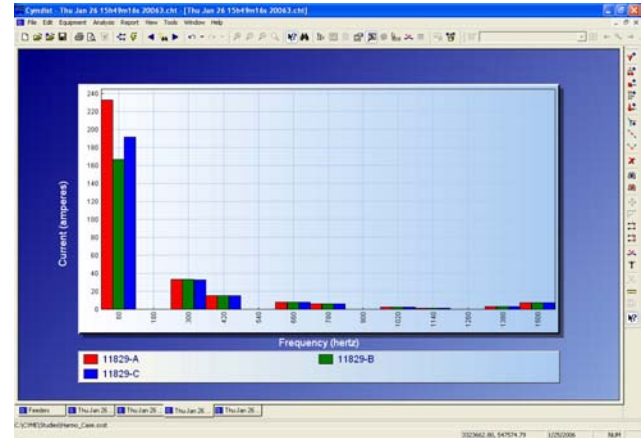
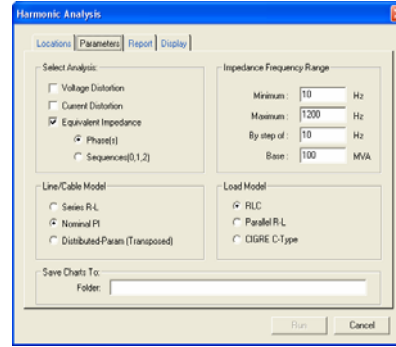
- Voltage harmonic distortion
- Current Harmonic distortion
- Impedance vs. frequency analysis
- Phase or sequence analysis
- Calculation of telephonic indices (TIF, ITIF, etc.)
- Selection of line/cable models: series R-L, nominal PI, transposed distributed parameters, etc.
- Selection of load models: (RLC, Parallel R-L, CIGRE C-Type, etc.)
- System detuning analysis

CYMVIEW, Simulation Results Management

CYMDIST is equipped with CYMVIEW which generates any kind of charts for all the analysis modules including the CYMDIST(HARMO) Module plots such as:

- Impedance magnitude plots versus frequency.
- Phase angle plots versus frequency.

Both of the above charts can then be utilized for resonance and de-tuning analysis.



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