With ETAP’s Harmonic Analysis module, you can identify harmonic problems, reduce nuisance trips, design and test filters, and report distortion limit violations. Comprehensive load flow and frequency scan calculations are performed using detailed harmonic models and non-integer harmonic filters. Results are shown graphically, including harmonic order, harmonic spectrum plots, and harmonic waveform plots, as well as detailed Crystal Reports®.
Key Features

Harmonic Load Flow
Harmonic Frequency Scan
Filter Design & Sizing
Inter-Harmonic Filter Modeling
Automatically Evaluate Harmonic Limits

Flexible Operation
- Fundamental load flow results
- Bus impedance magnitude & angle as functions of frequency
- Time-domain waveform plots
- Frequency-domain spectrum plots
- Includes phase shifting transformers

Capabilities
- Temperature-dependent line & cable resistances
- Single-tuned, high-pass, & band-pass filters
- Create filters to shift resonance points to less harmful frequencies
- Model up to the seventy-first (71st) harmonic
- Identify & analyze telephone interference problems
- User-expandable harmonic source library
- Identify resonance conditions

Calculate
- Harmonic filter performance
- Magnitude & angle of the system impedance at selected buses
- Telephone Interference Factor (TIF)
- Total Harmonic Distortion (THD)
- Root Mean Square (RMS)
- Arithmetic Sum (ASUM)
- IEEE 519 indices
- I*T product

Reporting
- Fundamental load flow results
- Report voltage & current harmonic distortions
- Report RMS, ASUM, TIF, & I*T values
- Bus impedances (magnitude & angle) in tables
- Text output reports including violation flags
- Use Crystal Reports® for full color, customizable reports
- Export output reports to your favorite word processor
- Graphical display of harmonic results
- Export one-line diagrams to third party CAD systems

View Impedance and Load Flow Plots Simultaneously

Unlimited Buses* & Elements
No Voltage Limitations
Looped & Radial Systems
Integrated 1-Phase, 3-Phase, & DC Systems
Multiple Generators & Grid Connections
Multiple Isolated Sub-Systems
Customizable Libraries
Graphical Display of Results on One-Line Diagrams
Graphical Display of Equipment Impedance & Grounding
Automatic Error Checking
Graphical Display of Overstressed Devices
Graphical Display of Over/Under Voltage Buses
Dynamically Adjust Display of Results

*Maximum number of energized buses during calculations is license dependent.