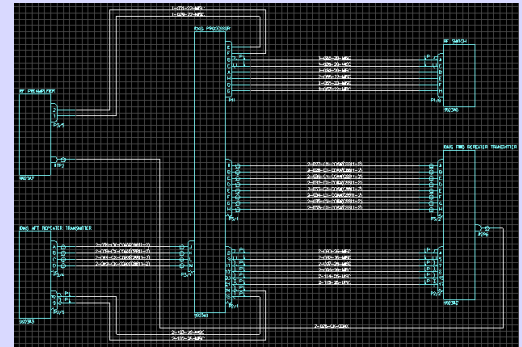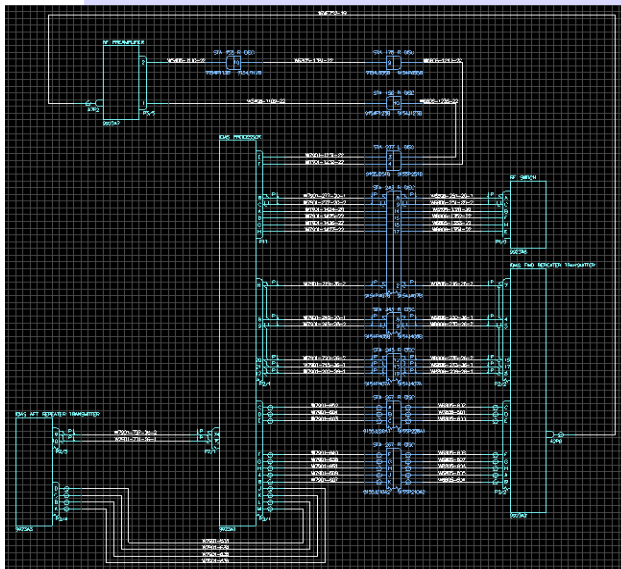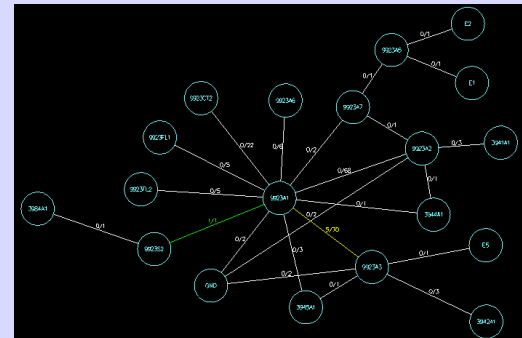# Schematic Wire Diagramming and Configuration

In collaboration with leading industrial partners, TechnoSoft has developed a software environment to automate the schematic configuration of wiring diagrams. This application takes connectivity information for components (at signal and wire levels) as input, organizes and derives the parametric relationships between components, and provides a user friendly interface to automate the creation of schematic diagrams for drawing creation of new and legacy systems.
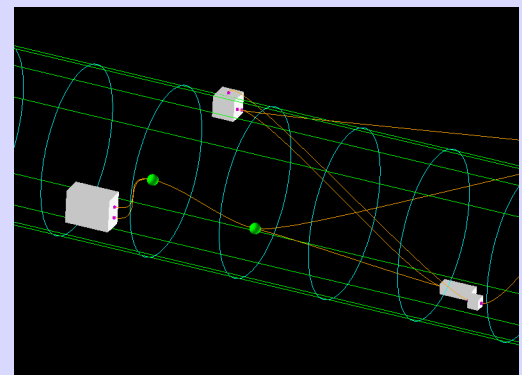
Wiring diagrams can be automatically created from corresponding signal diagrams, and all additional interconnects required in wiring connections are added automatically. All equipment, signals, and wires can be graphically queried for connection and signal-type information. This enables the user to easily determine signal-to-wire and wire-to-signal relationships.

The connectivity between components is visualized in a circle diagram. Each line between two components represents all connections between those components. Connections can be easily queried in this visual environment to edit their attributes and relationships as well as track their schematic drawing representations.

The information seamlessly flows from the component diagram to a schematic *signal diagram* which is automatically configured using industry standard rules for minimal signal interference and overlapping. This information is then automatically detailed in a *wire diagram* showing additional interconnects in the wire chains along with detailed connector information.

The application captures design intent by organizing the component, signal, connection, and wiring information in a unique hierarchy. Each portion of this hierarchy can be queried for its attributes and its dependent components. This provides an efficient mechanism for interacting with input and output controls, as well as modular system storage, query, and retrieval.

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