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Shenzhen Giga Design Automation

Giga RCGEN Usage

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- RCGEN is a standalone tool to read foundry technology file to generate the Giga internal model file .rlc, e.g., resistance and capacitance tables, for Giga built-in extraction engine.

- Typical usage
  - RCGEN -o <output_file_name.rlc> -l <layer_name_map_file> -n <rlc_model_name> [-num_of_cpu <number_of_cpu>] [-op_temp <operating temperature>] <input_tech_file>
    - <input_tech_file> support ITF (filename extension as .itf), iRCX (filename extension as .ircx) or the default GIM file.
    - <layer_name_map_file> is an ASCII file. Each line has two entry separated by space: the first entry is the layer name in technology file and the second entry is the layer name used in Giga, e.g., “metal1 M1” . Note that those layers and vias for MiM capacitor need not be written in the mapping file.
    - <rlc_model_name> is a string indicating the technology name with corner information, in case of multi-scenarios, please do use a unique rlc model name for different RC corners and temperatures, e.g., rcmax_m40, rcmax_125, rcmin_m40, rcmin_125
    - <operating temperature> is the operating temperature, which is needed if there is temperature based resistance model.

- For more details, please check “RCGEN –h” or contact Giga.

Temperature Dependent Resistance Model

- By default, RCGEN will consume temperature dependent coefficients and metal/via resistance tables, then write out the temperature-coefficients-scaled resistance tables into the rlc file.
  - RCGEN option "*-op_temp <temperature>*" is needed if temperature dependent coefficients exist in the input tech file.
  - For each scenario with different RC corner and temperature, an rlc model shall be prepared for AG use.

- RCGEN also provide an alternative way to write out those temperature coefficient tables into rlc file by the extra RCGEN option *-write_temp_coeff*
  - The RCGEN option "*-op_temp <temperature>*" is not needed if *-write_temp_coeff* is used.
  - The AG/HVP command "*set_parasitic_condition <rlc_model> -temperature <temperature>*" shall be set to specify the operating temperature for each scenario.
  - For each scenario with different RC corner, an rlc model shall be prepared for AG/HVP use.