



Checking the Structure and Presence of Timing Arcs in Characterization Files

Design Engineers realize that checking the characterization of the .lib files is becoming more and more complex. The need to improve the Quality of your Design Formats has become a must. With the Crossfire tool from Fractal Technologies we offer an automated solution to tackle these problems. For Characterization the tool standard includes the checks below, ready to use out of the box (The Crossfire tool includes 100+ checks). Additionally the API functionality offers you the possibility to add checks based upon user requests and needs. Crossfire supports all the standard formats/databases such as Verilog, TLF, NLDM, CCS, ECSM, NLPM, VHDL and VITAL.

Overview of the Characterization Arc Checks standard included in Crossfire:

Formats ==>	Verilog	TLF	NLDM	CCS	ECSM	NLPM	VHDL	Vital
Characterization - Arc checks:								
1) Liberty Timing Arcs			x	x	x			
2) Liberty Power Arcs						x		
3) Liberty Timing vs Power Arcs			x	x	x	x		
4) Liberty WHEN vs SDF check			x	x	x	x		
5) Liberty conditions consistency			x	x	x	x		
6) Liberty vs (verilog, VHDL, TLF) Timing Arcs	x	x	x	x	x	x	x	x
7) Liberty vs verilog SDF back annotation	x		x	x	x			

Explanation on some checks

1.Liberty Timing Arcs

- Typically you are dealing with many Process, Voltage, and Temperature characterization corners. For each of these corners we expect the same timing arcs with the same conditions and transitions or unateness. The crossfire tool will flag for each .lib file deviations.

4.Liberty WHEN vs SDF check

- WHEN conditions are typically BOOLEANS, SDF conditions in the .lib file are strings representing a BOOLEAN. Crossfire will check if the SDF and WHEN conditions represent the same BOOLEAN contents.

6.Liberty vs “verilog, VHDL, TLF” Timing Arcs

- The timing arcs represented in the .lib file must also occur in the other used timing formats such as verilog, VHDL/VITAL and TLF (Cadence Timing Library Format). It may occur that the transitions or unateness are not as strictly coded as in the .lib file. Crossfire can check for the exact transitions or only check for the timing arc presence

Fractal Technologies

Quality in Design Formats

info@fract-tech.com

www.fract-tech.com