CR-5000

SPECCTRAQuest Interface

Contents

Chapter 1　What is the SPECCTRAQuest Interface

The SPECCTRAQuest Interface is a circuit diagram designed by CR-5000/SystemDesigner in order for SPECCTRAQuest to verify net limitations.

A circuit diagram designed by SystemDesigner is passed to SPECCTRAQuest and the limiting conditions of a net that has been verified by SPECCTRAQuest can be output to Topology Rule File to be used at the time of forward annotation by CR-5000/BoardDesigner.

This chapter gives a summarized explanation of the net output dialog that is one of the functions of the SPECCTRAQuest Interface.

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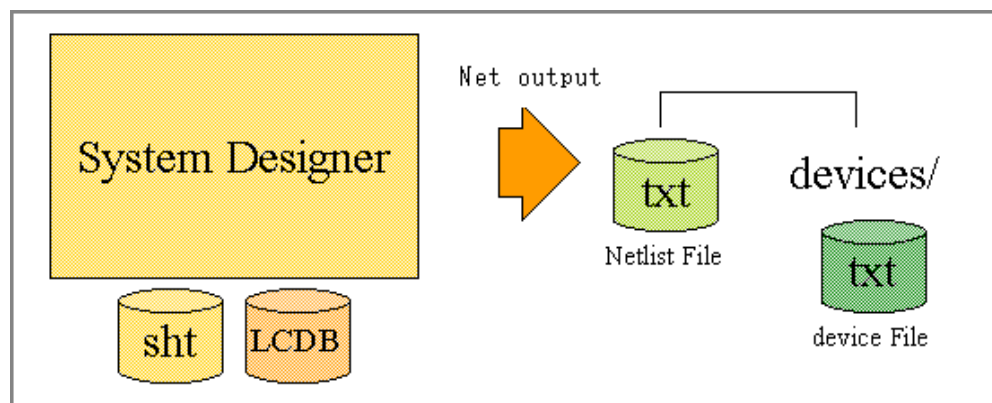
1.1   Overview of Net Output Dialog

From the circuit diagram created by CR-5000/SystemDesigner and the LCDB
that is used by the circuit diagram, the SD-SPECCTRAQuest Interface/Net
Output Dialog will make a net list file that can be imported by SPECCTRAQuest
as well as a device file that is needed at the time of importation.

There is one net list file for one circuit diagram. The device file outputs to each
part name in the circuit diagram.

The net list can specify the output file path. The default is the bottom of the
executed circuit diagram directory.

The device file outputs below the devices at the bottom of the directory that has
been output by the net list file.

If net output is repeated with respect to a circuit diagram for which net output has
already been executed, the creation of a device file can be omitted.

Chapter 2   Properties

This chapter explains the properties that are used by the SPECCTRAQuest Interface/Net Output Dialog.

2.1 SPECCTRAQuest Interface Properties

Properties used by the SPECCTRAQuest Interface/Net Output Dialog are described below.

2.1.1 Allegro Net Output Properties

SystemDesigner Property Name	SPECCTRAQuest Property	Notes
Part name	Device Type	Outputs the value specified by the circuit diagram component.
Reference	RefDes	Outputs the value specified by the circuit diagram component.
Part group	ROOM	Output only if specified by the circuit diagram component.
netLabel	Net Name	Outputs the value specified by the circuit diagram component.
Pin number	Pin Number	Outputs the value specified by the circuit diagram component pin.

2.1.2 Device File Output Properties

SystemDesigner Property Name	SPECCTRAQuest Property	Notes
Part name	PACKAGE	Outputs the value specified by the circuit diagram component and LCDB.
	CLASS	All ICs. Please change to SPECCTRAQuest.
	PINCOUNT	Counts pins specified by LCDB.
Pin name	PINORDER	Outputs pin names specified by LCDB.
Pin input/output	PINUSE	Outputs input/output properties specified by LCDB. I => IN O => OUT IO => BI Others => NC
Equivalent definition	PINSWAP	Outputs only if specified by LCDB. Equivalent to pin swap only (e.g. 1=2).

SystemDesigner Property Name	SPECCTRAQuest Property	Notes
Pin number	Pin Number	Outputs pin number specified by LCDB.
SQ_PART_MODEL	Signal Model	Outputs only if specified by LCDB
Value	Value	Outputs only if specified by LCDB.

Chapter 3   Restrictions

This chapter describes restrictions of the SPECCTRAQuest Interface/Net Output Dialog.

3.1   Illegal Characters

There are certain characters that can not be used with respect to properties within files in Allegro Net or device file.

When an Allegro Net or device file is output by the SPECCTRAQuest Interface, any restricted character will be replaced by underscore (_) .

SystemDesigner properties that convert illegal characters are as follows.

Property Name
Part name
Reference
netLabel
Pin name
Pin number
Part group
Value
SQ_PART_MODEL

Illegal characters in netLabel and other properties are as follows:

(■ = illegal character)

	Enter	0-1F	space	!	"	#	$	%	&	'	(	)	*	+	,	−	.	/	0-9	:	;
netLabel	■	■	■	■	■					■					■		■	■		■	■
Other properties	■	■	■	■	■	■	■	■	■	■	■	■	■		■		■	■		■	■

	<	=	>	?	@	A-Z	[	¥	]	^	_	`	a-z	{	|	}	~	del	80-FF
netLabel							■										■	■	■
Other properties	■	■	■	■	■		■	■	■	■		■		■	■	■	■	■	■

3.2   Limited Number of Characters

There are limits on the number of characters that can be used with respect to properties within files in Allegro Net or device file.

When an Allegro Net or device file is output by the SPECCTRAQuest Interface, each SystemDesigner property will be cut back to the limited number of characters.

Property Name	Number of Characters
Part name	25
Reference	30
netLabel	28
Pin name	30
Pin number	30
Part group	75
SQ_PART_MODEL	75

3.3   Objects to be Output

- In a SystemDesigner circuit diagram, components that are to be output are specified as either of the following two component types:

  - Part

  - Gate

- References specified in the instance layer are output. Identical references are taken to be one part.

- A net with two or more connected pins will be output. A net that is not connected to a pin, or a net that has one end connected and the other end not connected, will not be output within the Allegro Net.
  If a net that is not connected to two or more pins is output within the Allegro Net, an error will occur when it is imported by SPECCTRAQuest.

3.4   Creating Device Files

- Device files are generated from the LCDB. The following properties must be set for components in a circuit diagram:
  - Part name
  - CDB name
  - Component name
- There is one device file for part names. Even if an LCDB with different components and identical part names in a circuit diagram is referenced, the device file that is generated will be from the LCDB that referenced the first component retrieved.
- If a circuit diagram has multiple layers, an LCDB will be retrieved from the "landata.rsc" that references each circuit diagram.
  If a device file could not be created, please check the "landata.rsc" that was being referenced from the "rcpath" in each circuit diagram directory, and verify the part path that is set by that "landata.rsc".

Chapter 4　Messages

4.1   Error Messages3

No.	Message	Description / Solution
1	Cannot open file (XXX)	File missing or access denied.
2	Cannot create directory (XXX)	Access to directory for creating specified directory denied. Please change directory access permission.
3	Cannot open LCDB (XXX)	File missing or access denied. Please make LCDB, rectify the "landata.rsc" that refers to the circuit diagram that uses the LCDB, or change file access permission.
4	No license	No SPECCTRAQuest Interface license. Check to be sure the license is set correctly and contact ZUKEN.

4.2   Warning Messages

No.	Message	Description / Solution
1	[XXX] Invalid output net format	Output format of the specified line is invalid. Check to be sure you are not disconnected and contact ZUKEN.
2	[XXX] Too many characters. Part name: XXX	Part name in the specified line has more than the allowed number of characters. Please amend it to fit within the limit.
3	[XXX] Too many characters. Reference: XXX	Reference in the specified line has more than the allowed number of characters. Please amend it to fit within the limit.
4	[XXX] Too many characters. netLabel: XXX	netLabel in the specified line has more than the allowed number of characters. Please amend it to fit within the limit.
5	[XXX] Too many characters. Pin number: XXX	Pin number in the specified line has more than the allowed number of characters. Please amend it to fit within the limit.
6	[XXX] Too many characters. Part group: XXX	Part group in the specified line has more than the allowed number of characters. Please amend it to fit within the limit.
7	[XXX] Too many characters. SQ_PART_MODEL: XXX	SQ_PART_MODEL in the specified line has more than the allowed number of characters. Please amend it to fit within the limit.
8	[XXX] Illegal characters included. Part name: XXX	Part name in the specified line contains illegal characters. Please delete or replace illegal characters.
9	[XXX] Illegal characters included. Reference: XXX	Reference in the specified line contains illegal characters. Please remove or replace illegal characters.
10	[XXX] Illegal characters included. netLabel: XXX	netLabel in the specified line contains illegal characters. Please delete or replace illegal characters.
11	[XXX] Illegal characters included. Pin number: XXX	Pin number in the specified line contains illegal characters. Please delete or replace illegal characters.
12	[XXX] Illegal characters included. Part group: XXX	Part group in the specified line contains illegal characters. Please delete or replace illegal characters.
13	[XXX] Illegal characters included. SQ_PART_MODEL: XXX	SQ_PART_MODEL in the specified line contains illegal characters. Please delete or replace characters.

No.	Message	Description / Solution
14	[XXX] Type = Multiple XXX component data	More than one component data of the same type exists in the LCDB of a specified part. The number of pins for checking LCDB parts or gate component data is limited to one. Please create the LCDB to be used by the SPECCTRAQuest Interface so that there is one package for one component data.
15	[XXX] Cannot confirm package pin number	The number of pins could not be confirmed in order to check whether multiple LCDB gate component data exists. Please create the LCDB to be used by the SPECCTRAQuest Interface so that there is one package for one component data.
16	[XXX] No pin in component data	LCDB component data contains no pins. Please create component data or change the LCDB referenced by the component in the circuit diagram.
17	[XXX] parts component data (XXX) has multiple gates.	Parts type component data is one gate. For parts with more than one gate, please set type to gate.
18	[XXX] pinID = XXX input/ output properties not defined.	Input/output properties for a pin of the specified part are not defined. Please set input/output properties.
19	[XXX] pinID = XXX Pin name is not defined.	Pin name for the specified part is not defined. Please set pin name.
20	[XXX] pinID = XXX Pin number is not defined.	Pin number for the specified part is not defined. Please set pin number.
21	[XXX] Cannot open file (XXX)	Access to the device file or the directory with the device file that is to be opened is denied. Please change access permission.
22	[XXX] Illegal characters included. Pin Name: XXX	Pin Name of the specified part contains illegal characters. Please delete or replace illegal characters.
23	[XXX] Too many characters. Pin Name: XXX	Pin Name of the specified part has more than the limited number of characters. Please amend it to fit within the limit.
24	[XXX] No output from device file	The device file for the specified part did not produce any output. Please check LCDB and try again.

No.	Message	Description / Solution
25	[XXX] Part name (XXX) has been repeated	Part name has been repeated. Please change it so that the part name does not contain illegal characters or the number of characters is within the limit.
26	[XXX] netLabel (XXX) has been repeated	NetLabel has been repeated. Please change it so that the netLabel does not contain illegal characters or the number of characters is within the limit.