## 1. Confirmation of the Product Version

This simulation library contains simulation data of TAIYO YUDEN's Multilayer Ceramic Capacitors and Ferrite Bead Inductors for Design Force SI/PI and Lightning. You can use each data in this simulation library (refer to chapter 2) in the following products.

Simulation model

- · CR-8000 Design Force 2024
- · CR-8000 Lightning 2024

Footprint data

- · CR-8000 Design Force 2024
- · CR-8000 Board Designer 2024

Symbol data

· CR-8000 Design Gateway 2024 or later

Please check your product version beforehand.

In case of using the old version,

Please contact Zuken local office for Zuken EDA products.

#### [Design Force SI/PI] How to confirm the product version



#### [System Designer and Board Designer] How to confirm the product version



CR-8000 Release Number × CR-8000 Release Number CAD File Manager Release 2024.000 CR-8000 Release 2024.000 CR-8000 Release 2024.000

## 2. Download and confirm the contents

Download the file named **ZK\_TY\*\*.zip** (\*\* is the library version) from TAIYO YUDEN's Web site and unzip it on your desktop. Please make sure the structure of the extracted folder is as follows.



## 3. Import the simulation model (Design Force SI/PI)

(Skip to Chapter 5 if you use Lightning.)

1. Run the **Simulation Library Manager** from **[All Program] - [Zuken CR-8000] -[SI PI EMI Analysis Module] - [Simulation Library manager]** in the Windows start menu.



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2. Select [File] - [Import] from menu bar.

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#### 3. Select [Browse] and open the [Capcitor\_TY\*\*.ixfz] or [FerriteBeads\_TY\*\*.ixfz] file.



#### 4. Click [OK].

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-Import File: C:/hor	ne/Capacitor_TY2	Browse				
Options Overwrite existing data						
ОК	Cancel	Help				

#### 5. The simulation models are imported to Simulation Library Manager.

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UNK316B7334_LHT	TAINO YUDEN	N-Port	User 2		
UMK315B7473_LHT	TADO YUDEF	N=Port	User 2		
UMKITEB7474 LHT	TANO YUDEP	Nebort	User: 2		
UNKO10B7057-CHT	TATIO TUDEP	Builden -	Uper 2		
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UNK315B.14741.HT	TAINO YUDEN	N-Rost	How 3		
UMK315BJ475 L-T	TAINO YUDE	N-Port	User 2		
UMK315LD105 L-T	TAINO YUDEF	N-Port	User 2		
UMX325AB7105 M-P	TAINO YUDEF	N-Port	User 2		
UMK325AB7105 MHP	TAIVO YUDEN	N-Port	User 2		
UMK325B7105 NHT	TAINO YUDEN	N-Port	User 2		
UMK32587225 MHP	TAINO YUDEN	N-Port	User 2		
UMK325B7335 M-P	TAINO_YUDEN	N-Port	User 2		
UMK325B7335_MHP	TAINO_YUDEN	N-Port	User 2		
UMK325B7475_M-P	TAINO_YUDEF	N-Port	User 2		
UMK325B7475_MHP	TAIVO_YUDEF	N-Port	User 2		
UMK325B7475_N-TR	TANO YUDEF	N-Port	User 2		
UMK325BJ106_M-P	TAIVO YUDEF	N=Port	User 2		
UMK325B3106_MHP	TANO_YUDEF	N-Port	User 2		
UMX 325E J475 N-T	TAMO YUDE	N-Port	Uper 2		
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			14		
4					

# 4. Example of using the simulation models (Design Force SI/PI)

1. Run Electrical Editor from [All Program] - [Zuken CR-8000] -[SI PI EMI Analysis Module] - [Electrical Editor] in the Windows start menu.



2. Place the drivers, receivers, transmission lines and N-Port symbol on the canvas. Complete the topology by connecting them.





3. Right-Click the N-Port symbol and select [Assign Model...].

4. Select the simulation model you want to use from the dialog.



5. Click 'SI Analysis' icon.



6. If you are requested to save the scenario, save the file to continue the simulation.



7. Simulation results appear on the window.



## 5. Import the simulation model (Lightning)

(Skip to Chapter 7 if you use Design Force SI/PI.)

1. Start the [Simulation Library Manager] from [CAD File Manager], and then select [File] - [Import] from menu bar.



2. Select [Browse] and open [Capacitor\_TY\*\*.ixfz] or [FerriteBeads\_TY\*\*.ixfz] file.



Open 🔻 Cancel

#### 3. Select [OK].

Import		×				
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4. The simulation models are imported to [Lightning Simulation Library Manager].

## 6. Example of using the simulation models (Lightning)

1. Start the [Lightning Scenario] from [CAD File Manager].

(It is same procedure if you use [Lightning Realize] or [Lightning Verify].)



2. In the tree-view of the **[Constraint Manager]**, select **['Scenarios']** and then select **[New] - [Scenario]** by clicking the right mouse button to create new scenario.



3. Select **[Finish]** and input scenario name into the following **Name** dialog, and then click **[OK]**.

Create Scenario 🛛 🛛 🛛	Name	X
Create a scenario from     Selected items     Selected item and its aggressors	Name: Scenario1	_
Empty     Sack Finish Cancel Help		

4. Select this new scenario from Tree-view of Constraint Manager and then click **[Scenario Editor]** icon on top menu to invoke '**Scenario Editor**'.



5. Select Add Symbol icon and then select N-Port symbol icon from following Add Symbol dialog.



6. Click **'Value'** column in **'Component'** dialog and select appropriate number of pins. (Below is a case of 2 pins)

Component	i			×		Pin Count	×
Attribute		Value				0	
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						4	
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	OK		Cancel			16	
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Component	ł			8			
Attribute		Value					
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	OK		Cancel				

7. Place N-Port symbol on the canvas. (Put '**Esc**' key to finish this command)



8. Complete the topology by placing and connecting the drivers, receivers and transmission lines in the same way.



9. (Assign the simulation model to the placed N-Port symbol.)

Double click the N-Port symbol and open Model Information dialog.



Value	
CIR1	
	Default Va
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10. Select ['Circuit Model'] tab and click [Select Model...] button to open 'Model Selection' dialog which shows a list of simulation models.

Component Pin Circuit Model	ite/Proj
Library S	ite/Proi
Attribute Value	
Circuit Model	Name (v)
FBMH160	8_HL12
FBMH160	8_HL12
	8_HL22
FBMH160 FBMH160	8_HL221 8_HL300
Select Model FBMH160 FBMH160	8_HL300 8 HL300
FBMH160	8_HL331 8_HL331
OK Cancel FBMH160	8_HL33
FBMHI0U FBMH10U	8_HL47 8_HL471

Library: Site/Project	•	Name:	Tec	hnology:	*	-	<u> </u>
Name (v)	Type	Source	Technology	VCC	#Nodes	Characteristics	Comment
FBMH1608 HL121-T8 cir	Circuit	Project		0.0	2		TAIYO YUDEN, 1608, Z=120ohm(10
FBMH1608 HL121-TV cir	Circuit	Project		0.0	2		TAIYO YUDEN, 1608, Z=120ohm(10
FBMH1608 HL121-T cir	Circuit	Project		0.0	2		TAIYO YUDEN, 1608, Z=120ohm(10
FBMH1608_HL221-T8_cir	Circuit	Project		0.0	2		TAIYO YUDEN, 1608, Z=220ohm(10
FBMH1608_HL221-TV_cir	Circuit	Project		0.0	2		TAIYO YUDEN, 1608, Z=220ohm(10
FBMH1608_HL221-T_cir	Circuit	Project		0.0	2		TAIYO YUDEN, 1608, Z=220ohm(10
FBMH1608_HL300-T8_cir	Circuit	Project		0.0	2		TAIYO YUDEN, 1608, Z=30ohm(100
FBMH1608_HL300-TV_cir	Circuit	Project		0.0	2		TAIYO YUDEN, 1608, Z=30ohm(100
FBMH1608_HL300-T_cir	Circuit	Project		0.0	2		TAIYO YUDEN, 1608, Z=30ohm(100
FBMH1608_HL331-T8_cir	Circuit	Project		0.0	2		TAIYO YUDEN, 1608, Z=330ohm(10
FBMH1608_HL331-TV_cir	Circuit	Project		0.0	2		TAIYO YUDEN, 1608, Z=330ohm(10
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FBMH1608_HL471-T8_cir	Circuit	Project		0.0	2		TAIYO YUDEN, 1608, Z=470ohm(10
FBMH1608_HL471-TV_cir	Circuit	Project		0.0	2		TAIYO YUDEN, 1608, Z=470ohm(10
FBMH1608_HL471-T_cir	Circuit	Project		0.0	2		TAIYO YUDEN, 1608, Z=470ohm(10
FBMH1608_HL600-T8_cir	Circuit	Project		0.0	2		TAIYO YUDEN, 1608, Z=60ohm(100
FBMH1608_HL600-TV_cir	Circuit	Project		0.0	2		TAIYO YUDEN, 1608, Z=60ohm(100
FBMH1608 HL600-T cir	Circuit	Project		0.0	2		TAIYO YUDEN, 1608, Z=60ohm(100

11. Select appropriate simulation model and click **[OK]**.



Now the simulation model is assigned to the symbol.

12. You can run the simulation by clicking ['Simulation'] icon, and the result can be shown through the waveform viewing dialog.



## 7. Make use of footprint data to the board design

Footprint data **[Capacitor\_TY\*\*.ftp]** and **[FerriteBeads\_TY\*\*.ftp]** can be copied to the footprint library that you are currently using by "Copy CDB library". (\*)

\* Please read the notes on the next page.



### Notes on making use of footprint data

Items depending on the layer structure (padstack etc.) of this library are based on the sample data "BDsample" provided by Board Designer.

This board data exist in <the folder where Board Designer is installed>¥data¥Bdsample.

In case that your layer structure is different from that of "BDsample", you need to edit the data depending on the layer structure. Please change the layer name to the one you are using at the footprint registration menu of Board Designer as follows.

No	Layer Name	Layer Type
Ŕ	'n	'n
1	COND_A	Conductor
2	SYMBOL_A	Symbol Mark Lay…
3	COMP_AREA_A	Component Area …
4	METAL_A	Metal Mask Layer
5	RESIST_S_A	Resist Layer
6	HOLE	Hole Layer

## The layer structure of this library (Based on BDsample)

## 8. Make use of symbol data to the circuit diagram

You can use symbol data (Capacitor.smb, FerriteBeads.smb) on Design Gateway/System Designer by inserting them to the symbol library that you are using. If you are operating LCDB, you can also search components by concerning components data with symbols.

Design Editor - C:/home/CR8_MASTER/DESIGN/DESIGN1/DESIGN1.sdm	- 🗆 ×	
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		Jumper 21 ho
		7 uken data 2001/08/14

## Example of components search in LCDB operation

#### **Enquiries about Zuken EDA product operations**

Please contact Zuken local office for Zuken EDA products. If you are not certain, please go to <u>Zuken web site <a href="http://www.zuken.com/>">Liken web site <a href="http://www.zuken.com/>">http://www.zuken.com/></a> and refer 'Contact'.</u>