

IPOSIM – Getting Started Guide

February 2026



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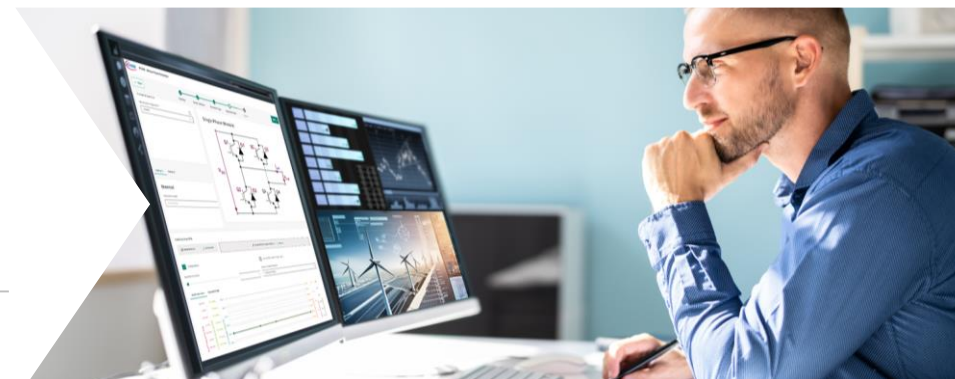
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IPOSIM - Infineon's online simulation platform

Easy way to calculate power loss & thermal performance of Infineon power modules, discrete and disc devices

IPOSIM helps you to **select the most suitable Infineon high power product** according to the needs of your application.



Main Features:

- ✓ **User-friendly flow**, designed to guide you step by step in your simulation
- ✓ Fast online simulation **powered by PLECS®**
- ✓ New Model generation **powered by SPICE**
- ✓ **More than 35 topologies** for discs and modules available, clustered by power conversion type.
(Constant release of new topologies)
- ✓ **Gate Driver, Microcontroller and current sensor recommendations** based on simulated components and application conditions with module topologies.
- ✓ **Multi-selection of up to 5 Infineon products** for performance comparison
- ✓ Save and Share designs

3 types of simulation offered:



Steady-State

Power and thermal calculations at a **single operating point**.



Load-Cycle

Power and thermal calculations for **changing operating conditions**.

PREMIUM



Lifetime Estimation (LTE)

Expected **lifetime estimation** based on chosen parameters.

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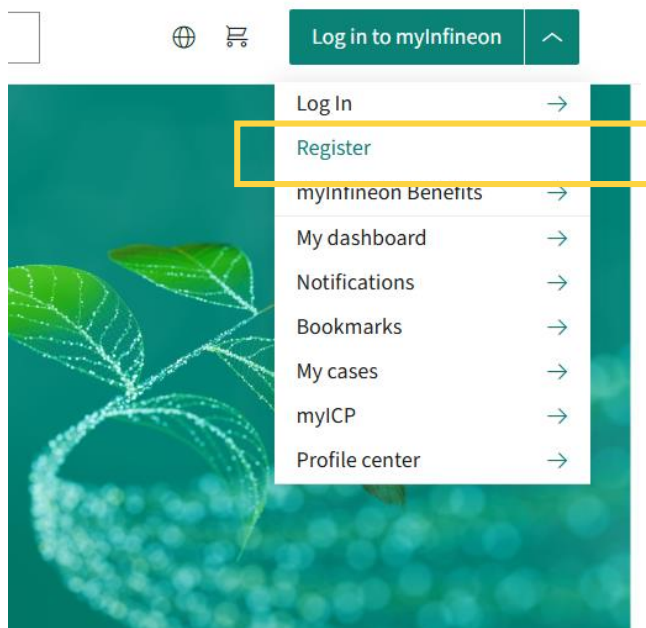
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How to set-up an Infineon account

Start by setting up a myInfineon account in 3 easy steps

Step 1

In www.infineon.com click on the upper right corner “myInfineon” and select the option “Register for myInfineon”



Step 2

Fill out the form and click on “Register”

myInfineon registration

Country/Territory
Germany

Mail

Password

☐ I agree that my personal data, which I submit to [Infineon](#) may be shared with and processed by [Infineon](#) for marketing purposes. This means that I may be contacted by [Infineon](#) via email and phone to provide me with marketing information about Infineon products, services & events based on my subscriptions & interactions, to perform surveys, and to improve my experience using data analytics, existing [Social Media](#) profiles and associated [tools](#). I additionally agree to Infineon transmitting my data to its licensed [distributors](#) & [partners](#) for contact regarding sales support matters via email and phone. I can revoke my consent any time.

Please visit [Infineon's Privacy Policy](#) for more information.

Step 3

An email will be sent out to activate your account, enter the code sent to you to finalize registration.



An E-Mail has been sent to [your-email@your-mail.com](#)
Please check your E-Mail (even the SPAM folder if it has not reached after some minutes) and enter the security code here.

Enter Security Code

[Need a new code? Resend](#)

[Terms of use](#)

[Imprint](#)

[Contact](#)

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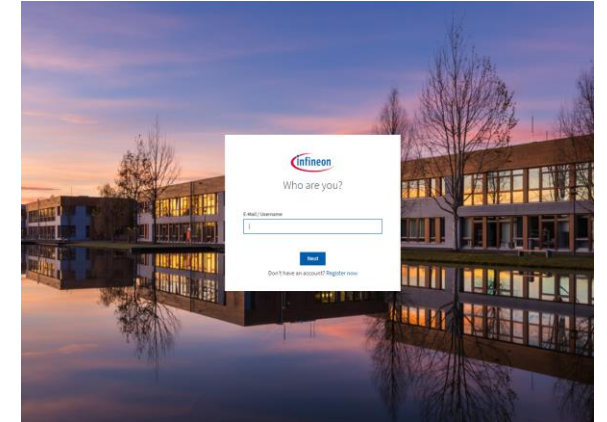
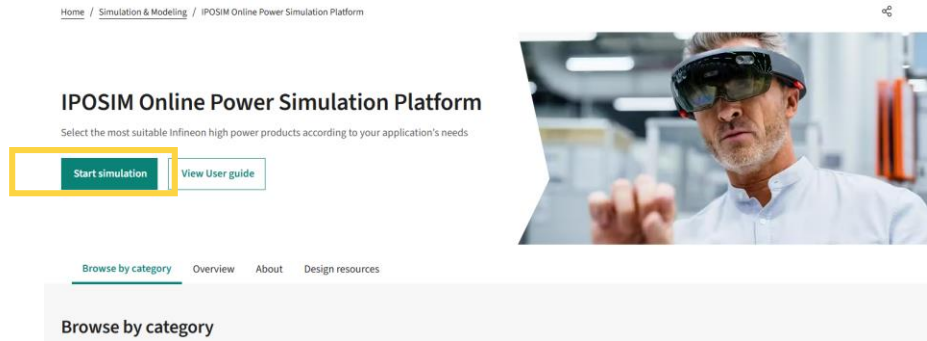
How to log into IPOSIM

With your “myInfineon” account activated, log into IPOSIM and follow the steps to start your simulation.



Log into IPOSIM

Go to www.infineon.com/IPOSIM and click on “Start Simulation”
You will need to log into myInfineon account.



Follow the process in IPOSIM

You are all set!

IPOSIM guides you through every step of your simulation.

Find out more information on the simulation step-by-step journey in the following pages.

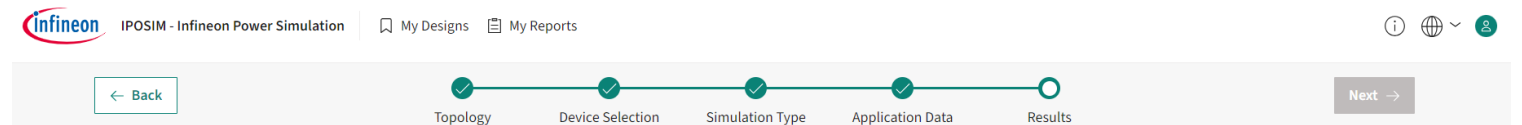


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Step-by-step simulation

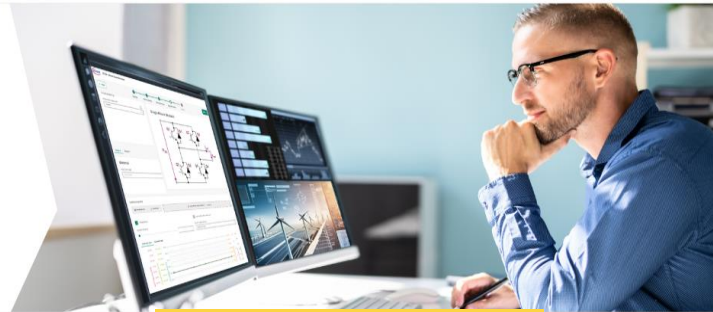
Step 1: Select your preferred topology

Lifetime Estimation Service

A new feature you can't miss

Accelerate your design with the first automated Lifetime Estimation Service on the market.

[Find out more](#)



Example:
Inverter topologies

All AC/DC Applications AC/AC Applications DC/DC Applications **DC/AC Applications**

Three Phase - 2 Level	
INDUSTRIAL MODULE	>
AUTOMOTIVE MODULE	>
INDUSTRIAL DISCRETES	>
AUTOMOTIVE DISCRETES	>
IPM	>
LOW VOLTAGE DISCRETES	>

Single Phase	
INDUSTRIAL MODULE	>

Three Phase - 3 Level NPC1	
INDUSTRIAL MODULE	>
INDUSTRIAL DISCRETES	>

Three Phase - 3 Level NPC2	
INDUSTRIAL MODULE	>

IPOSIM offers **more than 35 different topologies** to choose from, clustered by power conversion type.

New topologies are always coming up!

Step 2: Select your devices

Device Selection

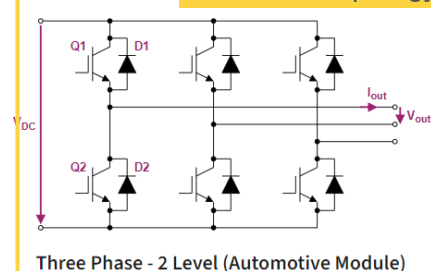
Filter devices

DC Link Voltage (Vdc) 400 V Blocking Voltage 600 (recommended)

Filter by Packaging All

a) Filtering by parameter selection

Circuit Topology



b) Quick search

Setup 1 FF08MR12W1MA1

Search...

Sort Product list by parameter

Device Name	TIM	Package	Module Parameters		Switch Parameters			Diode Parameters	
			V_{CES}/V_{DS} [V]	I_{Cnom}/I_{Dnom} [A]	$V_{CESat, 150^\circ C}/V_{DSsat, 150^\circ C}$ [V]	$E_{on} + E_{off, 150^\circ C}$ [mWs]	R_{thJH} [K/W]	T_{vjmax} [°C]	$V_{F, 150^\circ C}$ [V]
☒ FF08MR12W1MA1	N/A	Easy1B	1200	150	1.59	8.05	0.46	150	1.59
☐ FF300R08W2P2	N/A	Easy2B	750	200	0.98	19.10	0.09	150	1.15

Results per Page

10

← 1 2 →

Select up to 5 devices

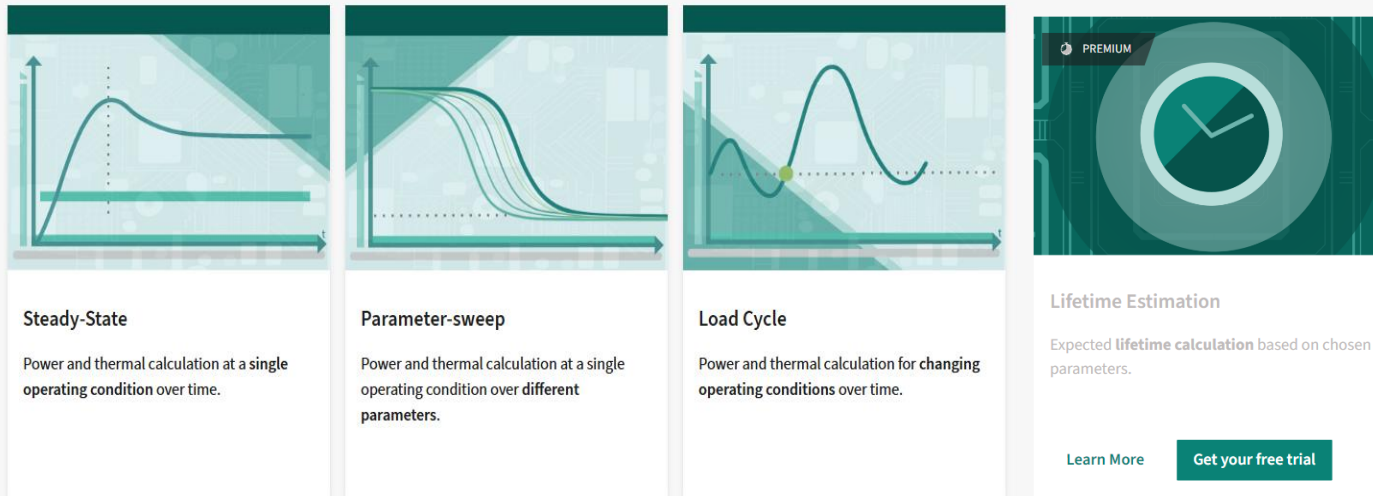
+ Add setup

– IPOSIM offers **filtering by parameter of your selection (a)** and **a quick search option (b)** in the product list. You can also sort the product list by parameter.

– You can select **up to 5 devices at the same time**, which allows you to compare their performance simultaneously. Simply click on Add setup to select additional devices.

Step 3: Select the type of simulation you want to run

Simulation Type



The interface displays four simulation type options, each with a representative graph and a description:

- Steady-State**
Power and thermal calculation at a single operating condition over time.
- Parameter-sweep**
Power and thermal calculation at a single operating condition over different parameters.
- Load Cycle**
Power and thermal calculation for changing operating conditions over time.
- Lifetime Estimation**
Expected lifetime calculation based on chosen parameters.
[Learn More](#) [Get your free trial](#)

IPOSIM offers 4 types of simulation:

- **Steady state** to simulate at a constant operating condition.
- **Parameter Sweep** to simulate at a single operating condition over different parameters.
- **Load cycle** to simulate a user defined load profile for changing operating conditions.
(More on that on the following pages)
- **Lifetime Estimation** as a premium service with the possibility of free trial.
(More on that on the following pages)

Step 4: Set your Application data

Application Data

Circuit & Control

Modulation Algorithm: SPWM

DC Link Voltage (Vdc): 400 V

Output Current (Iout): 100 Arms

Output Frequency: 50 Hz

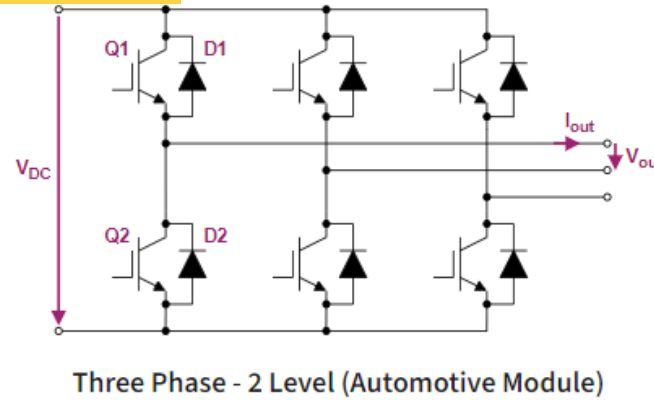
Switching Frequency: 8000 Hz

Modulation Index: 1

Power Factor cos(φ): 0.8

Reactive Power Type: Inductive Load (Lagging)

a) Set operating parameters



b) Set additional application data

Setup 1 - FF08MR12W1MA1 Setup 2 - FF08MR12W1MA1 Setup 4 - FF08MR12W1MA1 Setup 3 - FF08MR12W1MA1

Thermal

Heatsink model: Fixed Heatsink Temperature

Ambient Temperature T_a : 50 °C

Advanced

Turn-on gate resistor R_{Gon} : 5.1 Ω

Turn-on gate resistor R_{Goff} : 5.1 Ω

IPOSIM offers you the possibility to set-up additional parameters according to your system design:

a) Set the desired operating parameters

b) You can set cooling conditions and values for gate resistance.

Step 5: Compare your results:

Simulation Results				
	SETUP 1 - FF08MR12...	SETUP 2 - FF08MR12...	SETUP 4 - FF08MR12...	SETUP 3 - FF08MR12...
Device Parameters				
Gate Resistance				
Cooling Conditions				
Simulation Results				
Maximum Junction Temperature				
Switch	80.04 °C	80.04 °C	80.04 °C	80.04 °C
Diode	80.04 °C	80.04 °C	80.04 °C	80.04 °C
Switching Losses				
Switch	9.99 W	9.99 W	9.99 W	9.99 W
Diode	1.44 W	1.44 W	1.44 W	1.44 W
Conduction Losses				
Switch	38.03 W	38.03 W	38.03 W	38.03 W
Diode	5.93 W	5.93 W	5.93 W	5.93 W
Total Losses				
Switch	48.02 W	48.02 W	48.02 W	48.02 W
Diode	7.36 W	7.36 W	7.36 W	7.36 W

–In the section Modules/Discs, you can find among others results the **calculated values for maximum junction temperature, switching and conducting losses.**

It is presented in a way that allows you to simultaneously compare between your selected devices

Step 5: Compare your results:

Simulation Results

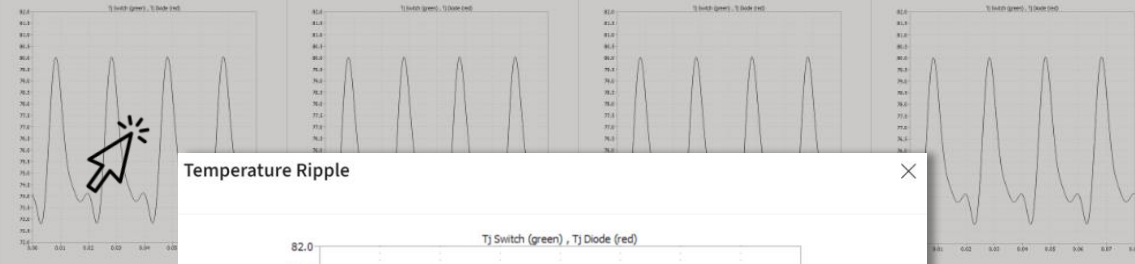
Download

Save

Copy link

Diagrams

Temperature Ripple



In the **Diagrams** section of the result page, you can view and inspect the temperature ripple resulting from operating the selected devices under specified working point.

–Click on the **diagram** for more scope functions like:

- a) Zoom-in by dragging with mouse
- b) Switch on cursors to measure signals
- c) Freeze the cursor distance for better measurement experience

← Back

Topology

Device Selection

Simulation Type

Application Data

Results

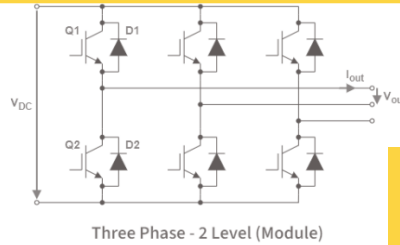
Next →

Step 5 – Download, Save and Share your design

Simulation Results

Circuit & Control

Modulation Algorithm	SPWM
DC Link Voltage (Vdc)	650 V
Output Current (Iout)	50 Arms
Output Frequency	50 Hz
Switching Frequency	2000 Hz
Modulation Index	1
Power Factor cos(φ)	0.8
Reactive Power Type	Inductive Load (Lagging)



Download

Save

Copy link

Download, save or share your design results.

Device Parameters

Gate Resistance

Cooling Conditions

Simulation Results

Maximum Junction Temperature

Switch

Diode

Switching Losses

Switch

Diode

Conduction Losses

SETUP 1 - FF50R12RT4

84.49 °C

59.77 °C

8.51 W

2.17 W

Recommended gate drivers

9 out of 427 selected

View All



IR2213S

1200 V high- and low-side gate driver IC with shutdown

– You can **download the simulation results in a excel file** format as shown in the Download button.

– You can also find the data sheets of selected devices for your detailed analysis and decision making.

– **Save your design** to refer to it later. Find your saved designs under My Designs button at the top of the page.

– **Share your design.** The page link will be copied to your clipboard, so you can share it with anybody to re-execute the simulation with same configuration. See an example [here](#).

NEW! - Gate drivers recommended for your simulation!

Recommended gate drivers

Setup 1

3 out of 427 selected

[View All](#)

1EDI3030AS

The EiceDRIVER™ 1EDI3030AS is an automotive qualified single channel high voltage gate driver optimized for SiC...

[View product](#)

[PDF](#)

a) Power module selection

b) Go to Gate Driver finder

c) Open the Gate Driver Datasheet

c) Go to Gate Driver product page

Under **Gate Driver recommendations** you can scroll down and see a preselection of Gate Driver devices **suitable for your specific simulation parameters and selected power devices.**

- a) Click on the drop down list to select another power module used in the simulation.
- b) Click on the tab 'View All' to redirect to Infineon's Gate Driver Finder for further support on your design.
- c) Open the Datasheet or redirect to the product page of the recommended Gate Driver.

NEW! - Microcontroller and current sensor recommendations

Recommended for you

We've found a selection of products that complement your design based on your simulation profile.

Microcontrollers

[View All](#)

32-BIT XMC™ INDUSTRIAL MICROCONTROLLER
XMC1301-T016F0008 AB
The XMC1300 series belongs to the XMC1000 Family of industrial microcontrollers which are based on the ARM® Cortex-M0 process...

[View product](#) [Datasheet](#)

[Add to shopping cart](#)

32-BIT XMC™ INDUSTRIAL MICROCONTROLLER
XMC1404-Q040X0200 AA

[View product](#) [Datasheet](#)

[Add to shopping cart](#)

32-BIT XMC™ INDUSTRIAL MICROCONTROLLER
XMC4100-Q48F128 BA
The XMC4100/4200 series belongs to the XMC4000 family of industrial microcontrollers based on ARM Cortex-M4...

[View product](#) [Datasheet](#)

[Add to shopping cart](#)

32-BIT XMC™ INDUSTRIAL MICROCONTROLLER
XMC4200-Q48F256 BA
The XMC4100/4200 series belongs to the XMC4000 family of industrial microcontrollers based on the ARM Cortex...

[View product](#) [Datasheet](#)

[Add to shopping cart](#)

Current Sensors

[View All](#)

CURRENT SENSORS
TLE4972-AE35D5
Analog high precision current sensor TLE4972 equipped with fast overcurrent detection pins. It's robust against stray field...

[View product](#) [Datasheet](#)

[Add to shopping cart](#)

CURRENT SENSORS
TLE4973-AE35D5-S0001
TLE4973-AE35D5-S0001 provides analog output proportional to the magnetic field measured and over current detection outp...

[View product](#) [Datasheet](#)

[Add to shopping cart](#)

CURRENT SENSORS
TLE4973-RE35D5-S0001
TLE4973-RE35D5-S0001 provides analog output proportional to the magnetic field measured and over current detection outp...

[View product](#) [Datasheet](#)

[Add to shopping cart](#)

CURRENT SENSORS
TLE4973-RE35D5-S0010
TLE4973-RE35D5-S0010 provides analog output proportional to the magnetic field measured and over current detection outp...

[View product](#) [Datasheet](#)

[Add to shopping cart](#)

If the last step of your simulation, under Recommendations, you can find additional recommended devices:

–Microcontroller

Explore Microcontroller recommendations for suitable devices for your specific simulation parameters and selected power devices.

–Current sensor devices

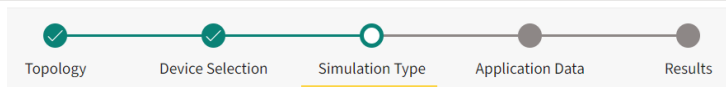
Explore current sensor recommendations in the final step of your simulation for AC-DC (PFC), DC-AC and DC-DC topologies

More to come!

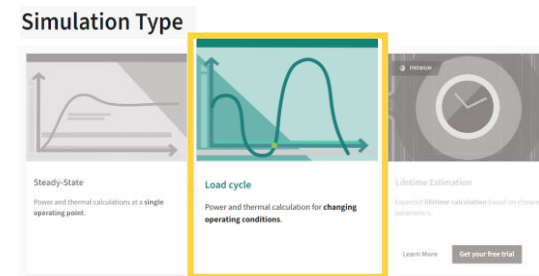
Load-Cycle Simulation

Load Cycle: upload your desired mission profile

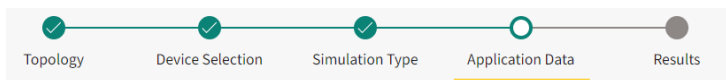
1. Select Load Cycle as simulation type



In the Simulation Type step select the option: **Load cycle simulation**



2.a. Use the excel format



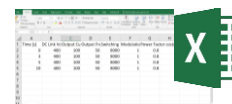
In the Application Data step:

1 Download the CSV template

Load cycle profile



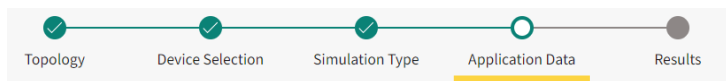
2 Fill out the template and save the document



3 Upload the CSV file, or drag and drop the file.

Drag and drop your profile here or [Browse...](#)

2.b. Use directly the table available online



Alternatively, you can input your desired mission profile values directly on the table displayed at the bottom of the page.

	Time [s]	DC Link Voltage [Vdc] [V]	Output Current [Iout] [Arms]	Output Frequency [Hz]	Switching Frequency [Hz]	Modulation Index	Power Factor cos(φ)
1	0	400	100	50	8000	1	0.8
2	3	400	100	50	8000	1	0.8
3	5	400	100	50	8000	1	0.8
4	10	400	100	50	8000	1	0.8

Load Cycle: upload your desired mission profile

More Load Cycle features

- › Selection simulation behavior between temperature ripple or average temperature
- › Interpolated or discontinuous load profiles available
- › Possibility to repeat the load profile cycles (up to 10 cycles)

Load cycle profile

template.csv Download

Drag and drop your profile here or Browse...

☒ Interpolation

Number of cycles

1

☒ User Defined Number of Load Cycles

Choose simulation behavior

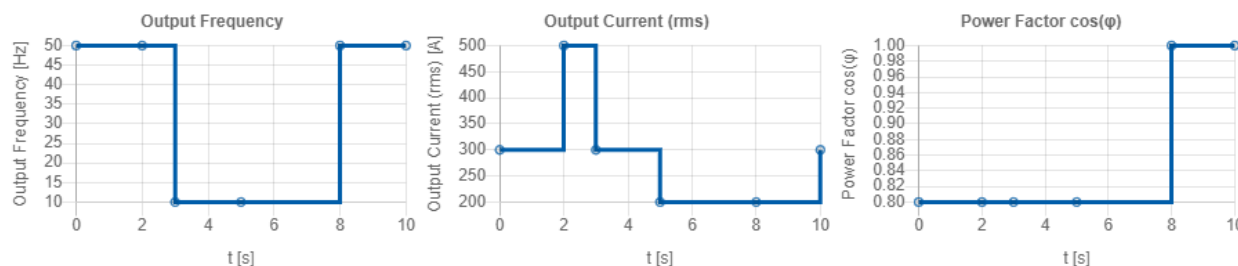
Temperature Ripple

Temperature Ripple

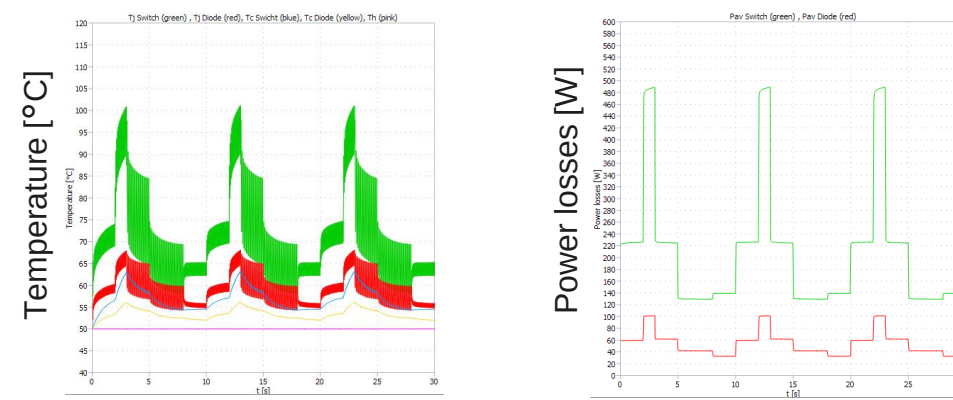
Average Temperature

Load Cycle Example: DC-AC 3-Phase 2-Level

- › Constant inputs: VDC = 650 V, fsw = 2 kHz, Modulation Index = 1
- › Load Profile with 3 cycles repeated
- › Click [here](#) to recall the simulation in IPOSIM.



Simulation Results



Lifetime Estimation Service (LTE)

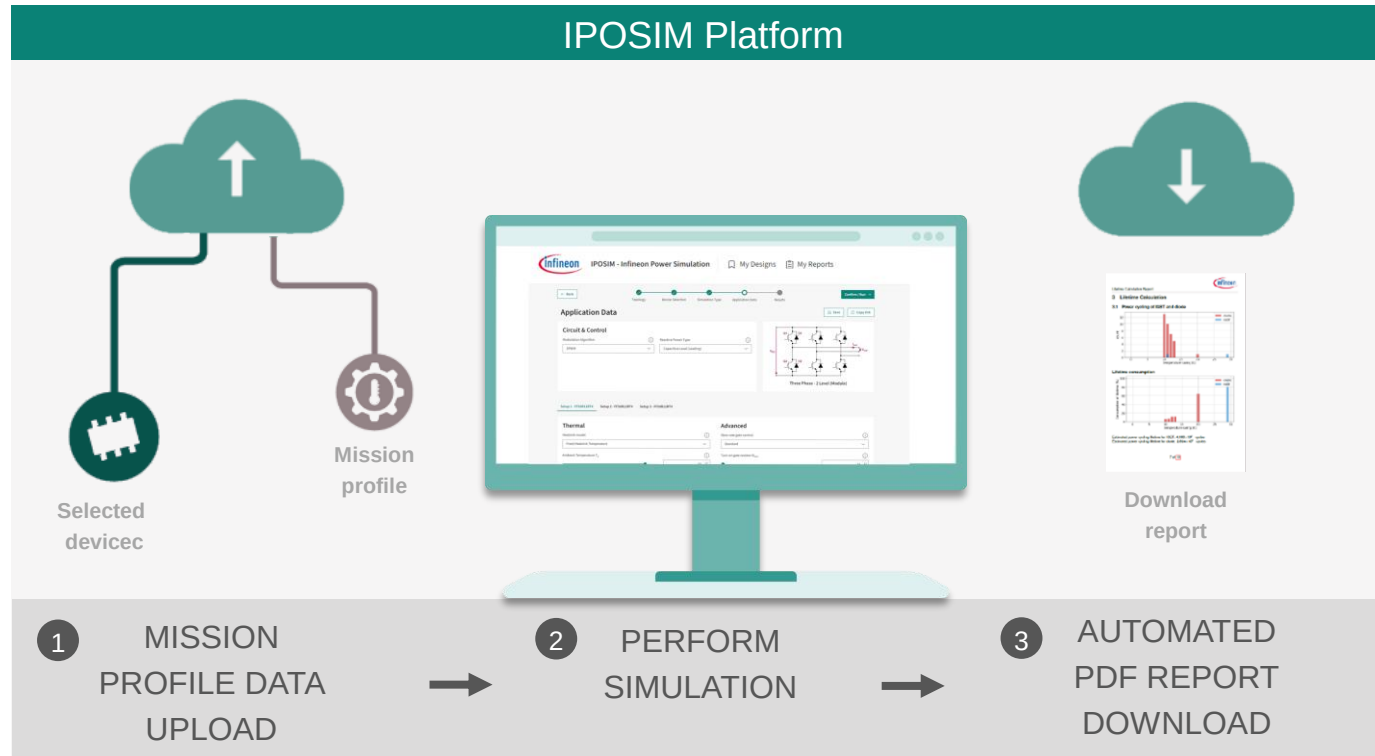
Lifetime Estimation (LTE)

Get online access to Infineon's unique know-how to ease your design process



Automated Lifetime Estimation service:

Digitally estimates the lifetime of IFX modules in your application.



Once logged into IPOSIM:

- 1 Select an Infineon power module and upload your desired mission profile.
- 2 Considering this information, IPOSIM will perform the lifetime estimation.
- 3 Once the calculations finalize, you can download the report, including the possible number of cycles for the selected device ([see report sample](#)).

Lifetime Estimation service main features designed to minimize your time to market



24/7 Access to unique know-how

- › Algorithm and models based on Infineon's unique device knowledge and decades of experience performing such estimations.
- › Designed for both short and long profiles for the **Single Phase, LLC, CLLC, Dual Active Bridge, Three-phase 2-level, and Three-phase-3 level ANPC, NPC1 and NPC2 topologies** (More topologies to come).
- › New! - Simulation with **output frequency of 0 Hz is now supported**
- › Available online as a premium service of IPOSIM



Save time and effort in your design process

- › Fully automated online simulation
- › Accessible **whenever and as many times as needed**
- › Dedicated server enabling execution of **parallel simulations**
- › Generated PDF report designed for simple analysis and documentation

Lifetime Estimation simulations on the go, as often as needed during the design process. Subscribe, pay and use, everything ONLINE





Log into IPOSIM, select your preferred **Subscription plan** and follow the instructions

Subscription Plan Billing Information Account Activation Payment Summary

Subscription Plan

Select the Lifetime Estimation plan that works for you

1 Lifetime Estimation

Highest flexibility

Valid for **3** months

No automatic renewal

€90.00

5 Lifetime Estimations

Most popular

Valid for **3** months

No automatic renewal

€405.00

10 Lifetime Estimations

Best value

Valid for **3** months

No automatic renewal

€765.00

1 Lifetime Estimation | Valid for 1 week | No payment method required

Not sure which plan?
Check out our FREE TRIAL

Required information: Company's registered name, address, ZIP, city, country.
Example: Infineon Technologies AG, Am Campeon 1-15
85579 Neuburg, Germany

[Service Terms and Conditions apply](#)



Pay online and start using Lifetime Estimation service immediately!

Use Corporate credit card, or pay with WeChat and Alipay.
You will receive an official invoice for reimbursement purposes.



Copy/ Page 1 of 2 Pages

Bill-to No. 4061576	INVOICE
Document No.	Date: 19.07.2021
Order No.	Date: 19.07.2021
For delivery note	Date
Delivery Date	Date: 19.07.2021
Customer's order No.	

Payment Terms	Our Department
Shipping Condition	Name
Air Way-Bill No.	Phone
Invoice	Fax
	E-Mail

Shipping Address: Customer no.	Tax Department Country
	Germany
	Our Customer Country
	Germany
VAT Identification No. customer	Our Tax Department Country
	Germany
	Branch
	FX Licences / Royalties

Item	Description of Goods/Service	Quantity	Unit Price	Pricing Unit	Item Price	Currency
10	Commodity code: AUVV NN GA 2020 ADAT EDCN GA DNR ADAT Item Text	1 PC		1PC		EUR

Carried Forward EUR

Your subscription was successful

Dear [redacted]

You are now subscribed to IPOSIM Lifetime Estimation service:

Subscription date: 06/08/2021

Your subscriptions:

Service: IPOSIM Lifetime Estimation Service [redacted]

Summary:

Subtotal: [redacted]

Value Added Tax: [redacted]

Total: [redacted]

This subscription is a one-time payment and will not be automatically renewed. An invoice will be sent to your email account in the following days.

Infineon Technologies AG shall provide your subscription in accordance with the IPOSIM Terms and Conditions attached to this email.

You accepted the IPOSIM Terms and Conditions when you submitted your order.

To learn more about how to use IPOSIM Lifetime estimation service, go to your order [demo videos](#) or [FAQ](#)

Sincerely,
Your Infineon Community Team

For detailed information about Lifetime Estimation please visit our Infopage. Here you can find the most important documents:



IPOSIM Lifetime Estimation Service

How long will your power module last in your application?

[Start simulation](#)[View User manual](#)[Overview](#)[About](#)[Documents](#)

Documents

Document Type ▾

Language ▾

[Reset all](#)

Some documents are accessible by Infineon account holders only. [Login](#) or [create an account](#) to access all of the available resources.

Document	Type	Version	Size	Date	
Guide - How to Subscribe to IPOSIM Lifetime Estimation	User Manual	1.00	1.86MB	Oct 08, 2024	
IPOSIM Lifetime Estimation service - Report Example	Additional Technical Information	1.00	0.72MB	Nov 19, 2021	
Terms and Conditions IPOSIM Lifetime Estimation service	Additional Technical Information	1.00	0.20MB	Nov 18, 2021	
IPOSIM Lifetime Estimation service	User Manual	1.00	1.23MB	Oct 19, 2021	

Here you can find:

1. A Step-by-step **Guide** of the subscription process of IPOSIM Lifetime Estimation service and some general FAQ's.
2. A **report sample** for users to inspect the results from the lifetime estimation simulation.
3. **Terms and Conditions** for the use of the Lifetime Estimation Service of Infineon IPOSIM Online Tool.
4. **User manual** of Lifetime Estimation service with detailed information about methodology and how to execute this simulation.

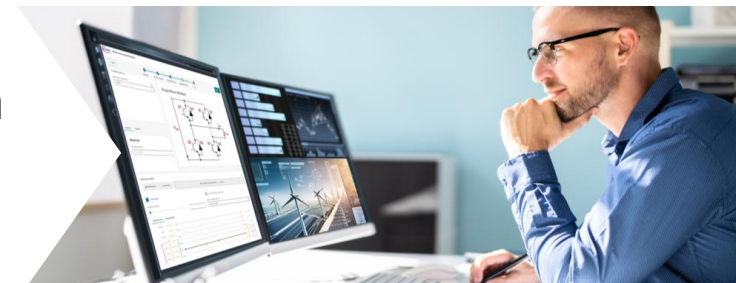
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IPOSIM with SPICE

IPOSIM with SPICE

Simulate now your system closer to real-world operating conditions with the **New PLECS model generation out of SPICE directly in IPOSIM!**



IPOSIM SPICEy now accounts for the complexities of your specific external circuitry setup and particular gate driver used, enabling you to simulate, test and optimize your system design with **a higher degree of accuracy**, thereby **reducing development time and costs**.

More realistic operating conditions to support their selection decision

Main Features:

- ✓ **Customize your own application environment** setup, tailoring for deadtime, stray inductance and gate voltage.
- ✓ Design support with **higher system accuracy**
- ✓ Model generation taking into account **your** choice of **gate driver**.



Higher system accuracy



Speed-up development



Reduce design iterations

Where? Online & free of charge. Go to:  **iposim.infineon.com**

IPOSIM with SPICE

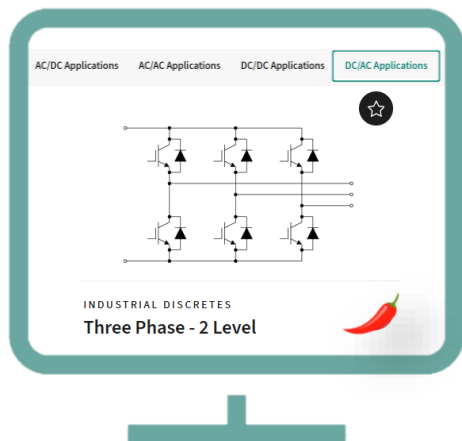
How to find IPOSIM SPICE?

Simply follow the chili icon in IPOSIM 🌶️ to simulate with higher accuracy.

 iposim.infineon.com



Topology



Select one of the **topologies** available for custom model generation



Device Selection

☒ 🌶️ My Model support only

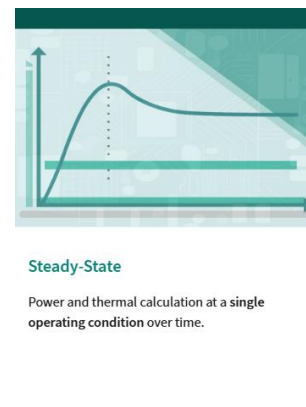
Device Name		
☐	IMW120R040M1H	🌶️
☐	IMBG120R034M2H	🌶️
☐	IMBG120R026M2H	🌶️
☐	IMW120R020M1H	🌶️
☐	IMW120R014M1H	🌶️
☐	IMW120R007M1H	🌶️

Select the **switch device(s)** available for custom model generation

Note: you can select more than one set-up



Simulation Type



Select the **Simulation Type** as usual

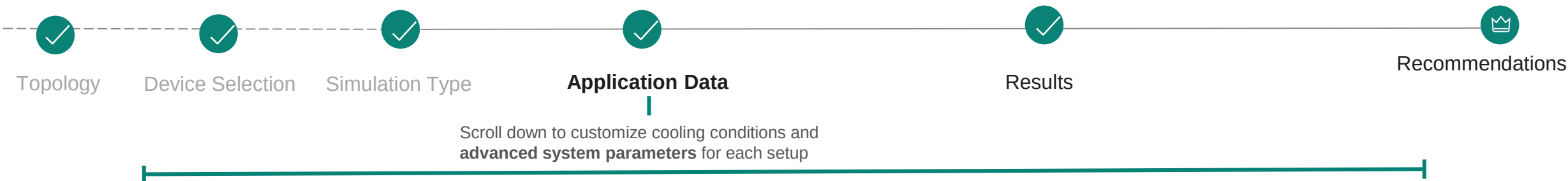
Application Data

Results

IPOSIM with SPICE

How to find IPOSIM SPICE?

Simply follow the chili icon in IPOSIM 🌶️ to simulate with higher accuracy.



1 Select the type of model

System parameters

Select model

Default

Default

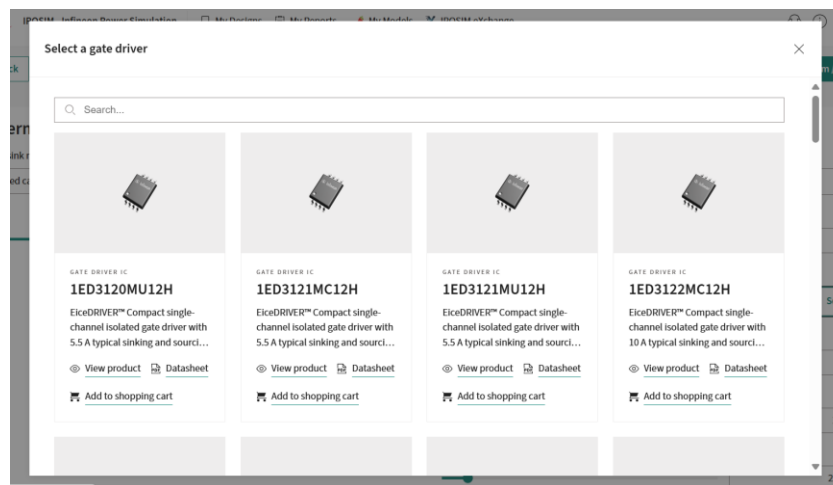
Generate custom model

2 Give a name to your custom model

Model name

My Spice Model

3 Select a Gate Driver



4 Customize advanced application parameters: r_g (on/off) V_{gs} , t_d , t_o .

Turn-off gate voltage
 V

Turn-on gate voltage
 V

Turn-on gate resistor R_{Gon}
 Ω ⓘ

Turn-off gate resistor R_{Goff}
 Ω ⓘ

DC-link stray inductance
 nH

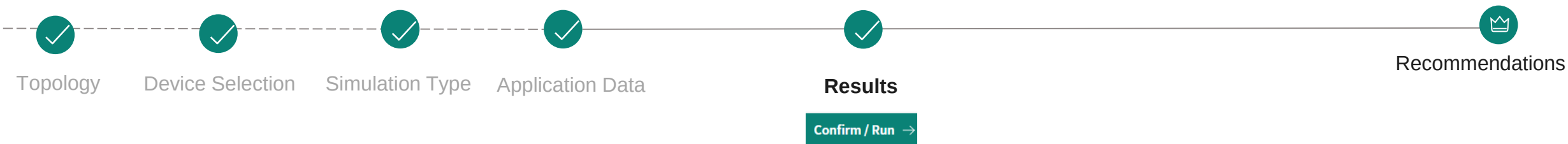
Dead time
 ns

- Default: standard plects xml model (based on datasheet)
- Custom model: plects model generation (powered by SPICE)

IPOSIM with SPICE

How to find IPOSIM SPICE?

Simply follow the chili icon in IPOSIM 🌶️ to simulate with higher accuracy.



Simulation results



Option to download xml file

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Tips & Tricks

Low Output Frequencies

- › 0-Hz Simulation not implemented, down to 0.1 Hz available
- › Load cycle simulation: for more accuracy put enough duration of low frequency section, e.g.: minimum of 10s for $f_{out} = 0.1$ Hz

Save & Share

- › Save your designs under My Designs incl. load cycle settings
- › Copy / paste browser URL (deep-link) to share your designs

Result Diagrams

- › Click result diagrams to enlarge
- › Discover signals with scope functions such as cursors, zoom-in/out

Too High T_j

- › Our thermal models of the products are not designed for overheated T_j
- › In case of $T_j > 200$ °C, check your input requirements, cooling condition or change to a bigger module

Solve artifacts

- › browser caching issues after new version updates
 - key combination [Ctrl] + [F5] to reset browser cache
 - or manually clear the browser caching

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INFINEON SUPPORT

Find the answer to your question

Frequently Asked Questions

IPOSIM simulation: Troubleshoot common errors

Why does IPOSIM always shows diode loss as notCalculated for MOSFETs?

Why is IPOSIM unstable? It was working before.

Limitations of IPOSIM

Troubleshooting unrecognized Infineon IGBT/SiC PLECS® models

Results per page

5

1

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