Device Modeling
IC-CAP Configuration

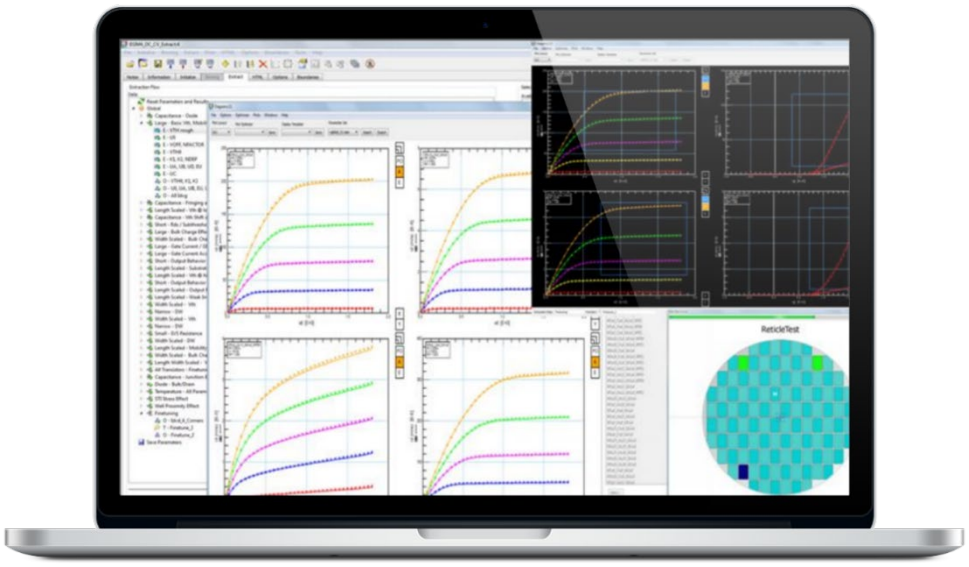
More Value, Simple to Choose, Easy to Configure

Device Modeling IC-CAP Bundle Software

Device Modeling IC-CAP software bundles provide device modeling engineers with a choice of value-packed, pre-configured combinations of software built for specific device modeling design challenges. These combinations enable you to address your measurement and modeling needs efficiently. To quickly find the bundle that fits your workflow, see the “Which bundle is right for you?” guide in Step 1.

Device Modeling IC-CAP and Measurement bundles are based on the W7001E IC-CAP Core and add separate IC-CAP or Measurement elements, each of which provides specific model extraction or measurement capabilities.

Model extraction elements are themselves comprised of one or more separate modules, which add additional modeling functions. These modules, which were formerly sold separately, are now grouped together into very efficient and effective combinations.



KEYSIGHT

PATHWAVE

Configure Your New Software

This step-by-step process will help you configure your new IC-CAP software when making your initial order.

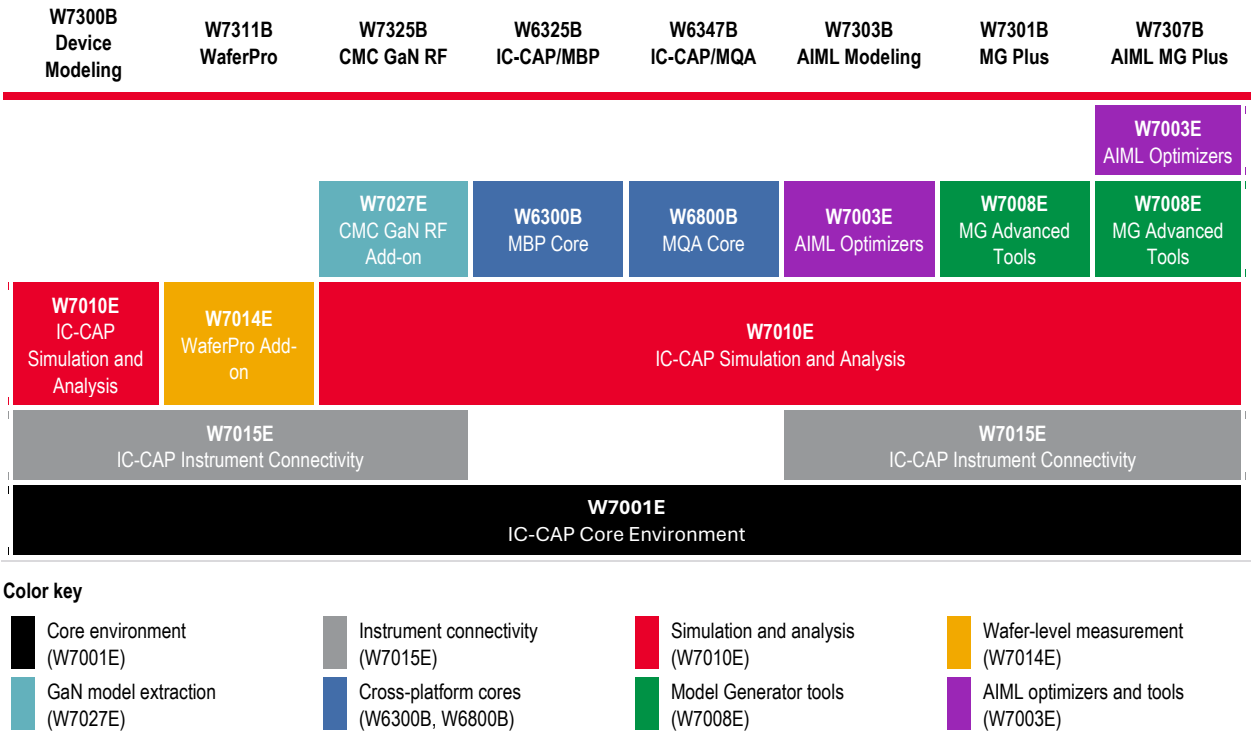
Step 1: Choose Your Software Product

Bundles

For most teams, the W7303B IC-CAP AIML Device Modeling Platform is the recommended starting point: it adds advanced ML optimizers and ML-based extraction flows (such as BSIM-BULK and PSP) to the core W7300B. Teams that also retarget models can step up to the W7307B IC-CAP AIML Model Generator Plus, which adds the Model Generator Advanced Tools, MGQA, and extra ADS licenses. The W7300B remains available as an entry-level option. For specialized needs, choose the W7311B for measurement-only wafer test benches, the W7325B for CMC GaN RF modeling, or the cross-platform W6325B (MBP) and W6347B (MQA) bundles.

Bundle Composition at a Glance

Every bundle is built on the W7001E Core Environment (bottom row); the blocks stacked above show the elements each bundle adds. W6325B and W6347B do not include W7015E, and W7311B swaps W7010E for the W7014E WaferPro Add-on.



Which Bundle is Right for You?

If you need to…	Choose
Characterize and model semiconductor devices with measurement, simulation, classic optimization and the Model Generator	**W7300B** IC-CAP Device Modeling Platform
Add machine-learning optimizers, and run ML-based complex extraction flows (for example, BSIM-BULK and PSP)	**W7303B** IC-CAP AIML Device Modeling Platform
Retarget existing models to new specs with Model Generator tuning, run MGQA and extra ADS licenses	**W7301B** IC-CAP Model Generator Plus
Combine Model Generator retargeting with ML-based extraction flows (for example, BSIM-BULK, SGP and PSP)	**W7307B** IC-CAP AIML Model Generator Plus
Run automated wafer-level measurements on a measurement-only test bench, with no simulation	**W7311B** IC-CAP Wafer Professional Measurement
Extract CMC GaN RF models (ASM-HEMT, MVSG)	**W7325B** IC-CAP CMC GaN RF Modeling
Do baseband silicon modeling in MBP and RF modeling in IC-CAP	**W6325B** MBP/IC-CAP Device Model Extraction
Do RF model extraction in IC-CAP and RF model QA in MQA	**W6347B** MQA/IC-CAP Modeling Bundle

Need a specific model family, such as BJT, MOS, other GaN models or power electronics? Add the matching extraction element from the tables below to any bundle that includes W7010E Simulation and Analysis.

Device Modeling IC-CAP Bundles

Model	Name	Description
W7300B	IC-CAP Device Modeling Platform	Includes all the tools to characterize and model semiconductor devices: the software environment, all measurement drivers, basic optimization, Python/PEL programming, the Model Generator, and all simulation links with a 20-pack ADS simulator license. Also includes the legacy W8503EP DataPro.
W7303B	IC-CAP AIML Device Modeling Platform	Includes everything in the W7300B, plus advanced optimizers (ML, Hybrid ML, PSO, BYO, and custom error function) that run ML-based extraction flows in native IC-CAP projects or in the Model Generator, such as BSIM-BULK and PSP.
W7301B	IC-CAP Model Generator Plus	Includes the W7300B plus the W7008E Model Generator Advanced Tools, which use tuning and optimization to adapt key model parameters to new targets. Also includes the Model Generator QA and an additional 10-pack of ADS simulation licenses.
W7307B	IC-CAP AIML Model Generator Plus	Includes everything in the W7301B, plus advanced optimizers (ML, Hybrid ML, PSO, BYO, and custom error function) that run ML-based extraction flows in the Model Generator, such as BSIM-BULK, SGP, and PSP.
W7311B	IC-CAP Wafer Professional Measurement	Enables automated wafer-level measurement with turnkey measurement drivers and Python/PEL programming to customize measurement algorithms and data processing. Does not include simulation.
W7325B	IC-CAP CMC GaN RF Modeling	Includes the W7300B plus GaN RF modeling extraction examples for the ASM-HEMT and MVSG models.
W6325B	MBP/IC-CAP Device Model Extraction	Cross-platform bundle that includes the W7001E IC-CAP Core Environment, the W7010E IC-CAP Simulation and Analysis element, and the W6300B MBP core bundle.
W6347B	MQA/IC-CAP Modeling Bundle	Cross-platform bundle that includes the W7001E IC-CAP Core Environment, the W7010E IC-CAP Simulation and Analysis element, and the W6800B MQA core bundle.

Environment/Simulation Elements

Model	Name	Description
W7001E	IC-CAP Core Environment	Core, GUI, data display, PEL/Python programming, and Model Generator.
W7003E	IC-CAP AIML Advanced Extraction Tools and Optimizers	ML and Hybrid ML optimizers, PSO, custom BYO and cost function, dynamic error plotting and advanced logs.
W7008E	IC-CAP Model Generator Advanced Tools	Adds the Model Generator Recentering and Targets tool with tuning and optimization techniques to efficiently adjust important parameters to adapt the model to the new targets. It also includes the new Model Generator QA.
W7009E	IC-CAP ANN Modeling Toolkit	Adds ANN solution to substitute the standard compact model with ANN technology to improve the model's accuracy
W7010E	IC-CAP Simulation and Analysis	Adds classic optimization/tuning, simulation with ADS (20-pack simulations), and all other supported simulators. Note that most commercial simulators require a license. Also, to use the advanced optimizers, the W7003E is needed.
W7014E	IC-CAP Wafer Professional (WaferPro) Add-on	Adds IC-CAP WaferPro for automated wafer-level measurement. Requires W7015 Instrument Connectivity.
W7015E	IC-CAP Instrument Connectivity	Enables all supported instrument drivers.

GaN, HEMT, MESFET Model Elements

Model	Name	Description
W7012E	IC-CAP FET Plus Extraction Package	Modeling extraction flow examples for EEHEMT, EEFET, Curtice, Root FET/Diode/MOS and Angelov-GaN.
W7013E	IC-CAP GaN Model Extraction Package Plus	GaN RF modeling extraction examples for ASM-HEMT, MVSG and Angelov-GaN models.
W7019E	IC-CAP NeuroFET Extraction Package	Keysight Artificial Neural Network (ANN) based model, NeuroFET extraction package for GaAs devices.
W7020E	IC-CAP DynaFET Model Generation	Keysight Artificial Neural Network (ANN) based model, DynaFET extraction package for GaN RF devices.
W7027E	IC-CAP CMC GaN RF Modeling Add-on	GaN RF modeling extraction examples for the ASM-HEMT and the MVSG models.

BJT Model Element

Model	Name	Description
W7011E	IC-CAP BJT Plus Extraction Package Plus	Keysight HBT, VBIC, Gummel-Poon and MEXTRAM models

MOS Model Elements

Model	Name	Description
W7021E	IC-CAP PSP Model Extraction Package	PSP model extraction package, target and corner modeling.
W7022E	IC-CAP HiSIM Model Extraction Package	HiSIM model extraction package, target and corner modeling.
W7023E	IC-CAP BSIMSOI Model Extraction Package	BSIMSOI model extraction package, target and corner modeling.
W7024E	IC-CAP BSIM3 Model Extraction Package	BSIM3 model extraction package, target and corner modeling.
W7025E	IC-CAP BSIM4 Model Extraction Package	BSIM4 model extraction package, target and corner modeling.
W7026E	IC-CAP HiSIM_HV Model Extraction Package	HiSIM_HV model extraction package, target and corner modeling.

Power Electronics Elements

Model	Name	Description
W7016E	IC-CAP Power Electronics PowerMOS SiC Extraction Package Add-on	Keysight PowerMOS SiC model for SiC and Si power devices for power electronics applications
W7017E	IC-CAP Power Electronics IGBT Extraction Package Add-on	Keysight IGBT model for power electronics applications
W7018E	IC-CAP Power Electronics GaN Extraction Package Add-on	ASM-HEMT model for power electronics applications

Step 2: Select Desired License Term

Table 1. License Terms

License Term	Description
Perpetual [1]	Perpetual licenses can be used indefinitely
Subscription	Subscription licenses can be used through the term of the license (6, 12, 24, or 36 months)

1. The purchase of EDA perpetual licenses is no longer available. For more information, refer to https://www.keysight.com/find/eda-perpetual-license-letter

Step 3: Select Desired License Type

Table 2. License Types

License Type	Description
Node-locked	License can be used on one specified instrument/computer
USB portable	License can be used on one instrument/computer at a time
Floating	Networked instruments/computers can access a license from a server one at a time. Multiple licenses may be purchased for concurrent usage. Four types of floating license are available: **N – Single site:** 1-mile radius from the server; **Q – Telecommuter:** A time-zone in Americas; a country in Europe/Asia; **R – Single region** [2]**:** Americas; Europe; Asia; **W – Worldwide** (export restriction identified in End User License Agreement (EULA))

2. Americas (North, Central, and South America, Canada); Europe (European Continent, Middle Eastern Europe, Africa, India); Asia (North and South Asia Pacific Countries, China, Taiwan, Japan).

Step 4: Choose Your Support Subscription and Duration

Table 3. KeysightCare Software Support Subscription

Subscription	Description
KeysightCare support subscription	Perpetual licenses are sold with a 12 (default), 24, 36, or 60-month software support subscription. Support subscriptions can be renewed for a fee after that.
	Subscription licenses already include a software support subscription through the term of the license.

Floating License Server Requirements

The Device Modeling IC-CAP floating license requires loading a vendor daemon on a license server. This server may be the same PC running the Device Modeling IC-CAP software. Full installation instructions and support are provided for compatible server operating systems.

Visit www.keysight.com/ind/license-server

Resources

Learn more about:

- What's New in Device Modeling
- Keysight Device Modeling Suite
- Device Modeling IC-CAP Design Software Technical Overview
- Software Terms, Types and KeysightCare Software Support Subscriptions

Keysight enables innovators to push the boundaries of engineering by quickly solving design, emulation, and test challenges to create the best product experiences. Start your innovation journey at www.keysight.com.

KEYSIGHT

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