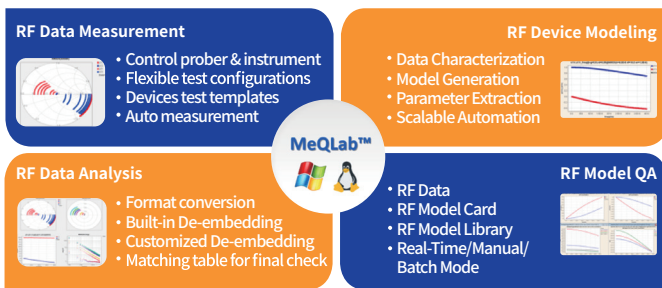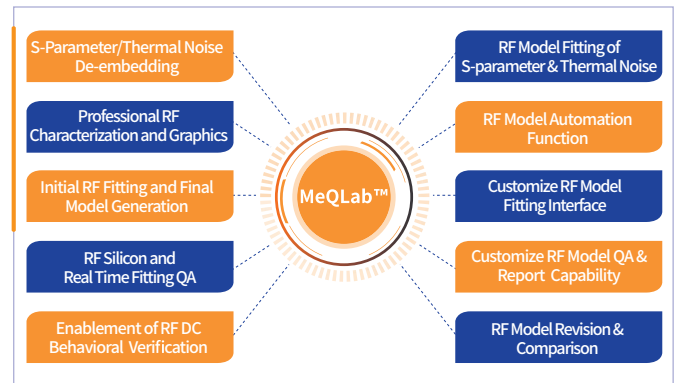# MeQLab

PRIMARIUS

Flexible RF Modeling Platform

Introduction

MeQLab is a flexible device modeling platform supporting Windows, Linux and UNIX operation systems with its cross-OS software. Benefiting from its open architecture and build-in NanoSpice simulator, MeQLab is capable of providing users with a convenient, powerful, and customizable RF device modeling platform, applicable from parameter extraction to data de-embedding and characterization. It supports smooth conversion from baseband modeling cards to RF modeling cards, DC characteristics verification, RF model parameter extraction, model library generation and QA, providing customers with professional all-in-one solutions for verification of various RF device models. MeQLab's unique RF device modeling solutions also feature the full capability up to 110GHz in handling RF raw data measurement and parameter transformation.

RF Data Measurement
- Control prober & instrument
- Flexible test configurations
- Devices test templates
- Auto measurement

RF Device Modeling
- Data Characterization
- Model Generation
- Parameter Extraction
- Scalable Automation

RF Data Analysis
- Format conversion
- Built-in De-embedding
- Customized De-embedding
- Matching table for final check

RF Model QA
- RF Data
- RF Model Card
- RF Model Library
- Real-Time/Manual/Batch Mode

MeQLab™

Key Advantages

- **All-in-one**
  Full capability from testing, characterization, parameter extraction to QA for I-V, S-parameters and NF50 thermal noise
- **Open and Flexible**
  Open API supporting data processing, parameter extraction flow, model validation, and sub-circuit model topology customization, etc.
- **Comprehensive**
  RF modeling for MOS, inductor, capacitor, and III-V devices (HEMT, HBT, etc.)
- **Multiple OS**
  Windows, Linux and UNIX operating systems
- **Fast Simulation**
  Built-in SPICE engine for fast RF characterization and optimization
- **Automatic Extraction**
 RF parameters & Global model

Applications

- RF device small signal testing
- RF model parameter extraction & optimization
- RF model development for new devices
- RF model QA verification

Specifications

- S-Parameter/Thermal Noise De-embedding
- Professional RF Characterization and Graphics
- Initial RF Fitting and Final Model Generation
- RF Silicon and Real Time Fitting QA
- Enablement of RF DC Behavioral Verification
- MeQLab™
- RF Model Fitting of S-parameter & Thermal Noise
- RF Model Automation Function
- Customize RF Model Fitting Interface
- Customize RF Model QA & Report Capability
- RF Model Revision & Comparison

- Real-time fitting criteria monitoring
- Professional RF automation extraction
- Efficient tabular of fine-tuned RF parameters
- Supports smooth conversion from baseband to RF models
- Advanced RF modeling and parameter extraction interface
- User-friendly RF fitting graphic selection and transformation
- Supports mainstream prober and meters for RF measurement
- Customizable open architecture and build-in parallel SPICE engine
- Fully integrated RF characterization charts including DC verification
- Fast and accurate RF simulation powered by built-in NanoSpice simulator
- Coefficients auto-extraction to scalable equation with RF modeling parameters

Application Examples

RF characterization and modeling
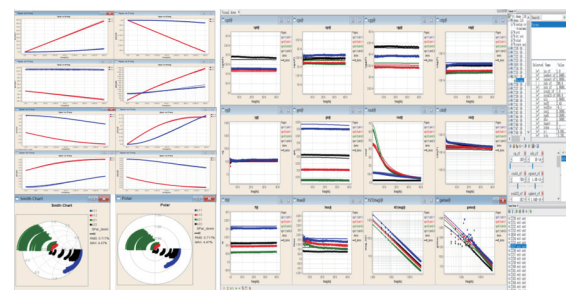
RF model library QA in batch mode