

Freescale Software Solutions

LTE PHY Conformance and Test Toolkit

Easy-to-use LTE quality assurance software



Overview

The LTE PHY conformance and test toolkit (LPC and test toolkit) helps to design, qualify and deploy a complete LTE baseband system inside of a LTE base station.

Users of the LPC and test toolkit will enjoy the following benefits:

- Eliminate conformance test risk—know the results before you speak with your customer
- Pre-sell your solution based on the LPC and test toolkit reporting
- Develop, sell, test and fully qualify your custom features that set your solution apart from the rest
- Advanced testing that squeezes out extra performance with software-only changes
- Qualify the RF component in-situ in minutes
- Use as a manufacturing test—save substantial time and test costs

The LPC and test toolkit consists of several desktop software tools:

RF Verifier:

Evaluates and qualifies the LTE RF transceiver to ensure device is functioning properly in your system.

Features:

- Support of various LTE bandwidths
- Support for all downlink ETM models
- Ability to capture uplink IQ samples
- Layer 1 independent operation

Eliminate or isolate the actual RF circuitry during debug

Diagnostic Monitor:

Deep and broad numerical data about the operation of your system.

Features:

- Detailed insight into cellular PHY layers from Layer 1 up into Layer 2
- No Layer 2 software stack required for detailed diagnostics operations
- Monitor activities with your selected Layer 2 software stack
- Real-time eNodeB (eNB) status, power graph
- Statistics—CRC error graph
- Message trace, FAPI logging
- Record and playback trace sessions
- Javascript/Visual basic scripting engine

Use of the Diagnostic Monitor will speed your debug and completion of LTE Layer 1 activities.

Conformance Tester:

Ensures 3GPP TS 36.141 standards compliance.

- Supports 36.141 standards so that you know you are ready to go to market:
 - Chapter 6 receiver tests, chapter 7 transmitter tests and chapter 8 performance tests
 - Home base station (Home BS) configuration

- End-to-end integrated and automated solution with:
 - Modular connection to third-party LTE test equipment
 - Rohde & Schwartz (R&S) SMU200A
 - R&S FSV
 - Aeroflex
 - Call Freescale if you require additional LTE test equipment to be added
 - Modular connection to third-party LTE RF Integrated Circuits (RFICs):
 - Maxim
 - Analog Devices
 - Call Freescale if you require an RFIC to be added
- Source code available for customized use cases:
 - Value-added features
 - Manufacturing testing and data capture
 - Custom smoke test development

Know before you go by using the Freescale Conformance Tester to ensure operation in your lab before sending equipment to any other lab. Use the results to pre-sell your solution to your customers.

PHY Tester:

The PHY Tester allows you to go way beyond the 36.141 standards to ensure your solution has the margin you need to be successful.

- Detailed insight into PHY layer
- Real-time eNB status, power graph
- Statistics—CRC error graph

Available Software Levels

What is included in the LPC and test toolkit	Basic Level	Professional Level Subscription	ProPLUS Level Subscription
Pricing	No Cost	Call Freescale	Call Freescale
RF Verifier	DL ETM Support UL Data Capture BW Support	DL ETM Support UL Data Capture BW Support	DL ETM Support UL Data Capture BW Support (includes tool source)
Diagnostic Monitor	L1 Status + 3 Message/Graphs WSDT GUI	L1 Internal Buffer Capture FAPI P4 & P5 Parsing Text Mode WSDT GUI	L1 Internal Buffer Capture FAPI P4 & P5 Parsing Text Mode WSDT GUI
Conformance Tester	Chap 6 & 8 (one section only)	Chap 6,7, 8 Support	Chap 6,7, 8 Support Includes Test Source Code
Phy Tester	- RACH Module Generic Script, - 2 Sample Test Cases (Binary)	- Rel8/9 (Binary) Tests - Automated Test Env	- Test Plan - Test Cases - Automated Test Suites - Autom Test Env - Call Model Testing
Support		Premium Support 50 hours, Annual	Premium Support 200 hours, Annual
Maintenance	No	Regular Updates	Regular Updates
Customization	No	No	Yes, Using Support Hours
Rel 10 Support	None	Extended Fee Required	Yes

- Message trace, FAPI logging
- Record and playback trace sessions
- Javascript/visual basic scripting engine

PHY Tester gives deep analysis of your LTE L1 sub-system to eliminate days and months of debug.

Speak with your local Freescale sales contact to gain access to the LPC and test toolkit.

Related Software and Tools

- VortiQa Layer 1 baseband software
- CodeWarrior Development Studio for StarCore 3850 DSP (Eclipse IDE)
- CodeWarrior Development Studio for Power Architecture® technology (Eclipse IDE)
- QorIQ Qonverge BSC9132 QDS for picocell base station development

- QorIQ Qonverge BSC9131 Reference Design Board for femtocell base station development

For more information about the LPT and test toolkit, visit freescale.com/LPCTestToolkit

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