

**Test Plan**

Plan Name: LTE 3GPP Band 13 Safe for Network

Plan Id: 3GPPB13SAFE

Version Number: 6.0

Release Date: October 2024

Latest Release Date: October 2024 : Open Access

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**Introduction** VZ\_TC\_3GPPB13SAFE\_1295255

Rev.	Author	Description of Changes	Date
0.7	Verizon Wireless	Initial Release	December 2009
1.0	Verizon Wireless	Updates to section 3.	February 2010
2.0	Verizon Wireless	Updates to sections 1, 2, and 3.	March 2010
3.0	Verizon Wireless	Updated reference 2.	June 2010
4.0	Verizon Wireless	Changed the SFN definition include specific test cases in each test plan rather than the entire test plans	December 2010
5.0	Verizon Wireless	Removed the need for temperature and voltage tests .	December 2010
5.1	Verizon Wireless	Clarified the number of samples required for specific test plans	December 2010

5.2	Verizon Wireless	Added GCF Certification references Added Reference to Required Test List	February 2011
5.3	Verizon Wireless	Corrected Section 2 references	March 2011
5.4	Verizon Wireless	Added Reference to IMS Registration and IMS Registration Retry Test Plan	June 2013
5.5	Verizon Wireless	<p>Updated section: Number of Samples Required.</p> <p>Removed Reference 8(Required Test case list) from Test Plan as it has been retired.</p> <p>Updated Following Test Plans with respect to required SFN test cases:</p> <ul style="list-style-type: none"> <li>- Removed Section 6 and 7 from LTE signaling test plan( 3GPP TS 36.523-1)</li> <li>-Removed following Test cases from LTE RF Conformance Test Plan(3GPP TS 36.521-1)</li> </ul> <p>6.3.2, 6.3.5.1, 6.3.5.2, 6.3.5.3, 6.5.2.2, 6.5.2.3, 6.5.2.4, 6.6.3.2, 6.7, 7.3, 7.4</p> <ul style="list-style-type: none"> <li>- Removed Following Test cases from LTE 3GPP Band 13 Supplementary RF conformance Test Plan:</li> </ul> <p>2.2, 2.3, 2.5.2, 2.6.3, 2.7, 2.8</p> <ul style="list-style-type: none"> <li>-Removed Following Test Cases from LTE 3GPP Band 13 Supplementary Signaling Conformance Test Plan:</li> </ul>	October 2015
6.0	Verizon	Updated Band 13 SFN requirements to RF test cases only	October

	Wireless		2024
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## Introduction

Verizon Wireless requires all devices designed to operate on the Verizon Wireless LTE 3GPP Band 13 network to meet Verizon Wireless performance requirements as detailed in the Verizon Wireless LTE 3GPP Band 13 Network Access Device Requirements (Reference 1). LTE Developers are required to pass the LTE 3GPP Band 13 Safe For Network Test Plan prior to operating any devices on the LTE 3GPP Band 13 Network in advance of device acceptance. Reference 2 contains more details on the device conformance test process. Safe For Testing is a collection of several Verizon Wireless test plans.

This publication is part of Verizon Wireless compliance with the FCC's rules for 700 MHz C Block (47 C.F.R. § 27.16), as explained in the FCC's Second Report and Order in WT Docket No. 06-150, "Service Rules for the 698-746, 747-762 and 777-792 MHz Bands" released on August 10, 2007.

In this document, the terms LTE (Long Term Evolution) and E-UTRA (Evolved Universal Terrestrial Radio Access) are considered equivalent.

## Definitions

The following terms are used in this document:

Acronym/Term	Definition
3GPP	3 <sup>rd</sup> Generation Partnership Project, manages GSM, EDGE, UMTS, HSPA, and LTE standards
E-UTRA	Evolved Universal Terrestrial Radio Access
LTE	Long Term Evolution
SFN	Safe For Network
VZW	Verizon Wireless

## Entrance Criteria

The Verizon Wireless LTE 3GPP Band 13 Open Development Device Certification and Introduction Process lists the Entrance Criteria for testing. This document adds no Entrance Criteria.

## Test Equipment Configuration

For details on test equipment currently approved by Verizon Wireless, refer to the Verizon Wireless LTE 3GPP Band 13 Test Equipment List (see Reference 9).

#### References

Verizon Wireless LTE 3GPP Band 13 specifications are available at  
<https://opendevdevelopment.verizonwireless.com/>.

Verizon Wireless LTE Device Requirements:

1. Verizon Wireless LTE 3GPP Band 13 Network Access

Verizon Wireless LTE Test Plans:

3. Verizon Wireless LTE 3GPP Band 13 Supplementary RF Conformance Test Plan

4. Verizon Wireless LTE Supplementary Signaling Conformance Test Plan

5. Verizon Wireless LTE Data Retry Test Plan

6. Verizon Wireless LTE Device UICC (USIM, ISIM) Interaction Test Plan

7. Verizon Wireless LTE SMS Test Plan

10. Verizon Wireless LTE IMS Registration and IMS Registration Retry Test Plan



## 2.0 LTE 3GPP Band 13 Safe for Network VZ\_TC\_3GPPB13SAFE\_430

3GPP Band 13 Safe for Network Testing is a subset of the entire set of conformance tests for LTE 3GPP Band 13; .

[Below 2 sections are required to be tested as part of LTE Band 13 SFN.](#)

### RF Conformance Part of GCF Certification

The following test cases shall be executed and passed on one sample as part of LTE 3GPP Band 13 Safe for Network Testing. The test cases are part of GCF Certification, specifically from 3GPP TS 36.521-1

Test Case	Description
6.3.4.1	General ON/OFF time mask
6.5.2.1	Error Vector Magnitude (EVM)
6.6.1	Occupied bandwidth
6.6.2.1	Spectrum Emission Mask
6.6.2.2	Additional Spectrum Emission Mask
6.6.2.3	Adjacent Channel Leakage power Ratio
6.6.3.1	Transmitter Spurious emissions (Up to 5GHz)

### VZW Supplementary RF Conformance

The following test cases shall be executed and passed on one sample as part of LTE 3GPP Band 13 Safe for Network Testing. The test cases are part of the Verizon Wireless LTE 3GPP Band 13 Supplementary RF Conformance Test Plan.



Test Case	Description
2.1	Maximum Output Power No MPR Or A-MPR
3.1	Reference Sensitivity Dual Receiver (QPSK)

Design Steps
Step Name
2 Test Plan Listing
Pre-Conditions
Procedures
<p>LTE 3GPP Band 13 Safe for Network Testing is a subset of the entire set of conformance tests for LTE 3GPP Band 13; see Reference 2 for more information on conformance testing and References 1 through 7 for the tests plans. Reference 8 contains a spreadsheet which lists the SFN test cases which are required. Note that there are updates to the conformance tests published along with the LTE 3GPP Band 13 specifications and these updates also apply to SFN testing.</p> <p>The Signaling Conformance, RF and RRM test cases specified by 3GPP are now executed as per the GCF (see Reference 2). These test plans (References 11 and 11) have been retired accordingly.</p> <p>The listing in Reference 8 contains a listing of both 3GPP test plans and Verizon Wireless test plans. The 3GPP test plans may be found at this website: <a href="http://www.3gpp.org">www.3gpp.org</a> and are shown as References</p> <p><b>1. RF/RRM Tests over Temperature and Voltage Extremes</b></p> <p>RF and RRM tests (References 1 and 3) contain test cases specified for temperature and voltage extremes. When executing the tests in the Safe For Network tests, LTE_DEVICES shall only be tested at ambient temperatures and nominal voltages as defined in each test plan.</p> <p><b>2. Number of Samples Required</b></p> <p>For the 3GPP based Signaling LTE 3GPP Band 13 Supplementary RF Conformance Test Plan (Reference 3), all tests shall be executed on three samples and all three samples are required to pass the test cases. In the LTE Device-UICC (USIM, ISIM) Interaction Test Plan (Reference 6), all test cases in Section 2 shall be executed on three samples and all three samples are required to pass the test cases; the remainder of the LTE Device-UICC (USIM, ISIM) Interaction Test Plan shall be executed on one sample.</p> <p>Reference 2 discusses the Global Certification Forum (see <a href="http://www.globalcertificationforum.org">http://www.globalcertificationforum.org</a>) as it applies to the Verizon Wireless certification of LTE_DEVICES. Regardless of the number of samples that the GCF requires, Verizon Wireless requirements that the RF and RRM tests be executed</p>

on three samples to pass the SFN test.

All other test cases shall be executed on one sample.

## 2. References

Verizon Wireless LTE 3GPP Band 13 specifications are available at [www.verizonwireless-opendevdevelopment.com](http://www.verizonwireless-opendevdevelopment.com).

Verizon Wireless LTE Device Requirements:

1. Verizon Wireless LTE 3GPP Band 13 Network Access

Verizon Wireless LTE Process Documents:

2. Verizon Wireless LTE 3GPP Band 13 Device Conformance Test Process

Verizon Wireless LTE Test Plans:

3. Verizon Wireless LTE 3GPP Band 13 Supplementary RF Conformance Test Plan
4. Verizon Wireless LTE Supplementary Signaling Conformance Test Plan
5. Verizon Wireless LTE Data Retry Test Plan
6. Verizon Wireless LTE Device UICC (USIM, ISIM) Interaction Test Plan
7. Verizon Wireless LTE SMS Test Plan
8. Verizon Wireless LTE 3GPP Band 13 Required Test Case List for Conformance and SFN.xls
9. Verizon Wireless LTE 3GPP Band 13 Test Equipment List
10. Verizon Wireless LTE IMS Registration and IMS Registration Retry Test Plan

Retired Verizon Wireless LTE Test Plans:

11. Verizon Wireless LTE 3GPP Band 13 RF and RRM Conformance Test Plan
12. Verizon Wireless LTE 3GPP Band 13 Signaling Conformance Test Plan

## Expected Results

## RequirementCoverageForTestPlan

2.0 LTE 3GPP Band 13 Safe for Network VZ\_TC\_3GPPB13SAFE\_430

Requirement Name	Requirement Plan Id	Created By	Created Date
DEVICE TESTING ON THE VERIZON WIRELESS LTE 3GPP BAND 13 NETWORK	LTEB13NAC	Admin User	11-07-0013 14:24:23