# SAVITRI
## TELECOM SERVICES

# Landslide E10

## Small Form Factor, Mobile Core, Wi-Fi, Diameter, and IMS Test System

The Spirent Landslide E10 offers the end-to-end coverage of Spirent's industry leading Landslide test solution in a portable form factor. The system comes with 2 Gigabit Ethernet and 1 multi-client Wi-Fi test ports and MultiClient OTA LTE supports the complete suite of Landslide test functions that Carriers and Equipment Manufacturers around the world rely on for validating their mobile and Wi-Fi networks, devices and services.

## Solution Overview

The Spirent Landslide E10 is a small form factor test platform that supports applications for benchtop, lab and distributed testing of Mobile and Wi-Fi networks. It can be used either as a test server connected to a Landslide C100 or C50 manager or as a standalone system.

The E10 supports testing Mobile Core, Wi-Fi, Diameter and IMS networks including Over-the-Air LTE testing with Spirent's Landslide application for development, product verification and predeployment scenarios.

- **User and Application Emulation—**Emulate users roaming and handing over through out the mobile and Wi-Fi networks

- **Test Network Functions—**Validate physical and virtual network functions for Mobile Core, Wi-Fi, Diameter and IMS nodes

- **Network Emulation—**Emulate adjacent network interfaces and nodes to create complete network topologies on a desktop

- **Distributed Wi-Fi Testing—**Combine up to 100 E10 systems distributed throughout a Wi-Fi network to validate network and service performance for enterprise and carrier Wi-Fi

- **Over the Air Testing—**Test Wi-Fi and Mobile RF network access devices using U1 LTE Module or a real handset
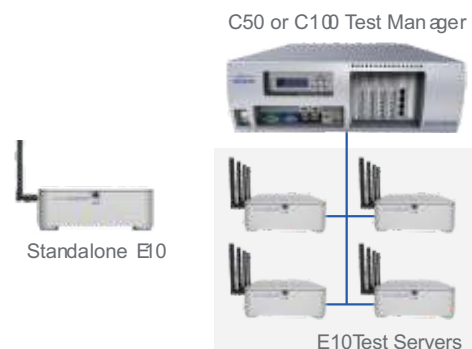
## U1 LTE Module

The new U1 module Landslide now supports LTE Over-theAir tests. The module emulates a single LTE UE and supports a wide range of LTE bands. Up to four U1s can be controlled by the Landslide E10 and conveniently snap into the new top plate.



## Configuration

The Landslide E10 platform is available as a standalone system that is designed for test applications where portability, small form factor and quietness are critical or as a Landslide Test Server that is connected to a C50 or C100 Test Manager for applications where multiple E10s will be deployed within the same test network. In the Test Server configuration the E10 adopts the licensing from the Test Manager controlling it.



C50 or C100 Test Manager

Standalone E10

E10 Test Servers

## Landslide E10 Technical Specifications

The Spirent C50 Test system is composed of a C50-S5 appliance that hosts the test manager and a test server process. For endto-end testing and applications requiring moderate capacity an add-on test server appliance can be added. Test port NICs must be purchased separately for C50-S5 appliances. An extensive catalog of applications and features is available on the C50-S5, to emulate and test 3G/4G/5G networks, network functions and services under real world conditions over control and user planes. These include: gNB, AMF, SMF, UPF, AUSF, UDM, UDR, PCF, NSSF, CHF, NRF, SMSF, SCP, SLF, BSF, CBCF, LMF, NEF, N3IWF, GMLC, MME, SGW, PGW, and SGSN.

| Part Number | Product Name |
|---|---|
| Dimensions | Height: 72mm (2.8 in)<br>Width: 197mm x 197mm<br>(7.76 in x 7.76 in) |
| Weight | 1.63 KG (3.6 lbs) |
| Operating Environment | 0° C to +35° C |
| Non-Operating Environment | -20° C to + 70° C |
| Relative Humidity | 10% to 70% RH, non-condensing |
| Power Requirements | 100-240VAC, 50/60Hz, 2.0A Max |
| Test Ports | 2 x 10/100/1000 Copper Ethernet<br>1 x Wi-Fi 4x4 MIMO<br>4x OTA LTE Modules |
| Wi-Fi Options | 802.11 a/b/g/n/ AC Wave 1 and Wave 2 |
| Supported LTE Bands | 1,2,3,4,5,7,8,12,13,20,25,26,29,30,41 |
| Management Port | 10/100/1000M Copper Ethernet |
| Regulatory Approvals | FCC Part 15, class A<br>CE EN55022<br>EN 55024<br>EN 60950<br>FCC ID on internal Wi-Fi Transmitter<br>FCC ID on U1 LTE Module |

## Client PC Requirements

The Landslide Client hardware requirements depend on the system license and the testing activity. The recommended values are:

- 64-bit Operating System with 4 GB RAM and 1GB memory assigned to client
- Minimum 10 GB available disk space
- 100 MB/1G Ethernet connection to the LAN

The Landslide software requirements are:

- Test system web pages are best viewed with Internet Explorer 10+ or Firefox 30+
- JavaScript and Java Web Start must be enabled in the browser
- Popup blockers should be disabled before starting
- Cookies should be allowed if you want your memory settings to save
- Java™ Runtime Environment 1.8.0 (or later)

## Ordering Information

| Part Number | Product Name | Description |
|---|---|---|
| **Landslide E10 Test Server Options** | | |
| L-E10-N-TS | Landslide E10 Test Server with 802.11N Wi-Fi | Landslide E10 Test Server with 802.11N—Must be purchased as an expansion to an existing Landslide test system. Includes 802.11N Wi-Fi. |
| L-E10-AC1-TS | Landslide E10 Test Server with 802.11AC Wi-Fi | Landslide E10 Test Server with 802.11AC—Must be purchased as an expansion to an existing Landslide test system. Includes 802.11A C Wi-Fi. |
| L-E10-AC2-TS | Landslide E10 Test Server with 802.11AC Wave 2 Wi-Fi | Landslide E10 Test Server with 802.11AC Wave 2—Must be purchased as an expansion to an existing Landslide test system. Includes 802.11AC Wave 2 Wi-Fi. |
| L-E10-FT-001 | Landslide E10 add Standalone License to E10 Test Server | Landslide E10 add Standalone License to E10 Test Server—Adds Standalone System (SAS) capability to existing E10 Test Server. |
| The Landslide C50 Test Manager can support up to 16 E10 Test Servers<br>The Landslide C100 Test Manager can support up to 100 E10 Test Servers | | |
| **U1 LTE Module Options** | | |
| L-U1-LTE-001 | U1 LTE module with standard SIM card plug-in | U1 LTE Module with standard SIM card plug-in. Must be purchased as an expansion to an existing Landslide test system. |
| L-U1-LTE-002 | U1 LTE module with SIM adapter inside | U1 LTE Module SIM adapter inside for SIM server deployment. Must be purchased as an expansion to an existing Landslide test system. |
| L-APP-050 | Landslide LTE OTA module application software | Landslide LTE OTA module application software -- requires U1 LTE over-the-air module. Works with LTE MME nodal application (license not required). Fingerprint of existing manager required. |

| Landslide E10 Standalone Options | | |
|---|---|---|
| L-KIT-E10-SAS-1001 | E10 Standalone System with 802.11N Wi-Fi | Landslide 802.11N 3x3 MIMO E10 mini-appliance with combined manager & test server SW. Includes IP Data & Wi-Fi UE Emulation applications. Additional SW bundles available. Scales to 1000 UEs |
| L-KIT-E10-SAS-1002 | E10 Standalone System with 802.11AC Wave 1 Wi-Fi | Landslide 802.11AC Wave 1 3x3 MIMO E10 mini-appliance with combined manager & test server SW. Includes IP Data & Wi-Fi UE Emulation applications. Additional SW bundles available. Scales to 1000 UEs |
| L-KIT-E10-SAS-1003 | E10 Standalone System with 802.11AC Wave 2 Wi-Fi | Landslide 802.11AC Wave 2 4x4 MIMO E10 mini-appliance with combined manager & test server SW. Includes IP Data & Wi-Fi UE Emulation applications. Additional SW bundles available. Scales to 1000 UEs. |
| L-SB-E10-SAS-001 | E10 Standalone LTE Test Bundle | Bundle of LTE S/P-GW & MME test applications. Includes on-demand commands, failure scenarios and SMS client emulation |
| L-SB-E10-SAS-002 | E10 Standalone LTE Emulation Bundle | Bundle of LTE Core node emulations. Includes 3GPP MSC and X2 HO emulations. |
| L-SB-E10-SAS-003 | E10 Standalone Diameter Test Bundle | Bundle of Diameter test applications for testing AAA, PCRF, HSS, DRA & OFCS network nodes. Includes related interfaces and generic Diameter message editor. |
| L-SB-E10-SAS-004 | E10 Standalone Diameter Emulation Bundle | Bundle of Diameter node emulators and related interfaces. Includes L-FT-010 AAA Diameter Server, L-FT-026 PCRF Node, L-FT-037 HSS Node and more. |
| L-SB-E10-SAS-005 | E10 Standalone UMTS/GPRS Test Bundle | Bundle of UMTS/GPRS test applications. Includes HNB abd 3G voice emulation. |
| L-SB-E10-SAS-006 | E10 Standalone UMTS/GPRS Emulation Bundle | Bundle of UMTS/GPRS node emulators. Includes NSC and 3G voice option. |
| L-SB-E10-SAS-007 | E10 Standalone SIP Voice/Video Test Bundle | Bundle of VoLTE and IMS test features for testing SIP-based voice and video. Includes IMS node emulation and interfaces. |
| L-SB-E10-SAS-008 | E10 Standalone IP Data & Ipsec Test Bundle | Bundle of IP data, IPSec and VPN test features for testing SGWs and secure VoIP. Includes IPSec, data plane scenarios and TLS/SRTP for VoIP |
| L-SB-E10-SAS-009 | E10 Standalone Wi-Fi Offload GW Test Bundle | Bundle of Wi-Fi Offload Gateway test and emulation application and features. |

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