

### DigiTest<sup>®</sup> ICE<sup>™</sup> LE Service Assurance Unit

As emerging triple play services experience rapid growth and converge with declining legacy services, service providers anticipate new revenue sources resulting from applications such as IPTV, VoIP, VPNs, and online gaming. More than ever before, service providers are challenged to provide cost effective and efficient service assurance solutions for these new services. The test and management solutions deployed in these converged, next generation networks (NGNs) must be able to support a complete set of services offered in the network. These unified solutions deployed for service assurance must not only verify the customer application and/or service trouble report; it must also be able to isolate the problem's source at the physical location in the network.

Tollgrade has developed the DigiTest ICE LE Test Unit to provide a more cost-effective and efficient service assurance solution for Triple Play services. With its extended temperature range operation, minimal size and robust feature set, the DigiTest ICE LE is optimized to support the pre-qualification, service verification and fault isolation needs of triple play services beyond those provided by DSLAM-embedded SELT/DELT capabilities. Coupled with Tollgrade's LoopCare Test OSS, the ICE LE proactively samples the network to determine its ability to provide triple play services. Once provisioned, the ICE LE can verify the copper loop and customer premise location from the point in the network that most precisely reflects the experience of the customer at the DSLAM.

In addition to providing a broad set of diagnostic tools, the ICE LE allows for smart dispatch decisions—either out to the subscriber premises, onto the copper loop or into the central office, all from the DSLAM location.

With its compact size, flexible mounting configurations and low power consumption, the DigiTest ICE LE facilitates easy, flexible installation and economical operation—improving the triple play service assurance solution's ROI.

Under the control of Tollgrade's leading LoopCare Test OS, which applies expert analysis for fault diagnosis, ICE LE empowers service providers with a tool that can efficiently and cost-effectively complement their aggressive delivery and assurance objectives for Triple Play Services.



## Benefits

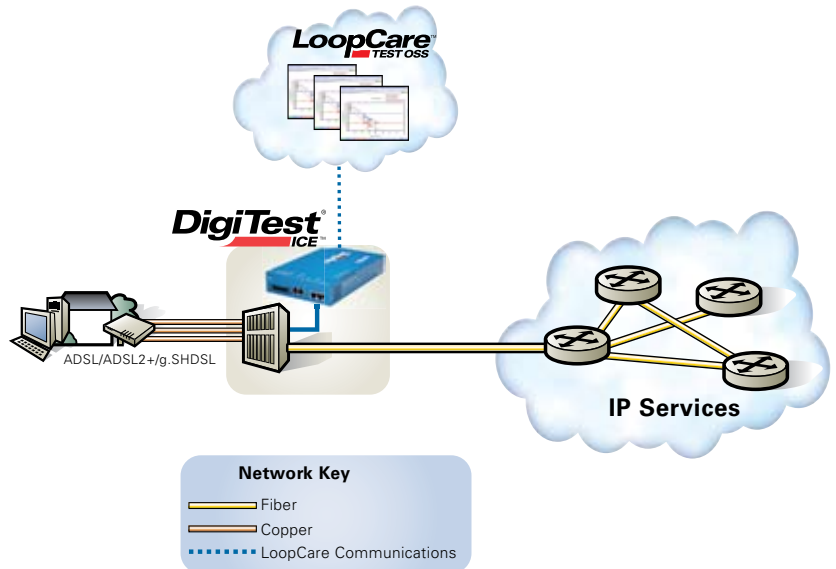
Tollgrade's DigiTest ICE with LoopCare allows service providers to:

- Maximize service offering;
- Verify service prior to cutover, increasing subscriber's satisfaction while minimizing costly dispatches;
- Proactively identify network issues and faults prior to subscriber trouble reports;
- Reduce trouble ticket volume and handling time via front-end handling and flow through; and
- Minimize costly dispatches through expert trouble analysis.

## Features

The DigiTest ICE delivers metallic loop verification service assurance from the network DSLAM location, offering a full suite of multi-layered capabilities—all controlled via the LoopCare Test OSS—including:

- Network Prequalification: Loop Insertion loss on the ICE LE enables a highly accurate method to prequalify subscribers for xDSL services including ADSL2+, VDSL2, VoIP and IPTV.
- Installation Verification: Know that the loop is good before provisioning the customer. Through the ICE LE metallic and wideband measurements isolation of xDSL service affecting faults on the copper loop is critical at this stage.
- In-Service Verification: The ICE provides a broad suite of metallic testing designed for accurate fault isolation of the copper loop in support of xDSL service delivery.



DigiTest ICE IP Service Assurance Unit and LoopCare OSS Remote DSLAM Architecture

## Specifications

### Physical

Dimensions (H x W x D) . . . 1.36 x 9.47 x 5.74 in. ( 35 x 241 x 139 mm)  
Multiple Mounting options, Duplicate LED appearances

### Environmental

Operating Temperature . . . . . -40°C to +75°C (-40°F to +167°F)  
Storage Temperature . . . . . -40°C to +70°C (-40°F to +158°F)  
Humidity . . . . . 5 to 95% (non-condensing)

### Power Requirements

Power . . . . . -48VDC (10 watts)  
Fusing . . . . . 2A

### Communications and Test Interfaces

10/100 Base-T Ethernet Communications  
10/100 Base-T Ethernet Test Port (future application)  
RS-232 Craft Port  
Auxiliary RS-232 port  
4-wire Test Bus for metallic narrowband/wideband testing

### Certification

NEBS Level 3 and CE Mark

### Metallic Testing Capabilities – Narrowband

Voltage  
AC . . . . . Range 0 to 245Vrms +/-5%  
DC . . . . . Range +/-350VDC +/-5%

Resistance  
AC . . . . . 0 to 3.5Mohms +/-5%  
DC . . . . . Range 0 to 3.5Mohm +/-5%

Capacitance . . . . . Range 0 to 10uF +/-5%

Longitudinal Balance . . . . . 0 - 65 dB At 200Hz

Load Coil Detection . . . . . Up to 5

Capacitive Balance . . . . . Reported up to 100%

Loop Insertion Loss . . . . . 5dB-60dB At 300kHz

Tone . . . . . 577.5Hz +/- 1Hz

Transmit/Receive Narrowband Tone . . . . . DC to 20KHz

Hazardous Potential  
Speech Detection  
Line Circuit Analysis; Draw and break dialtone

### Wideband Metallic Testing

Filtered weighted wideband noise (G filter): . . . . . up to 2.2MHz  
Transmit/Receive Wideband tone: . . . . . 3K-2MHz Tx; 3K-17MHz Rx  
Bridged TAP Graphical Results (future)

### Availability and Ordering Information

Please contact your Tollgrade representative for more information.

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