Delivering triple-play services that meet customer expectations for both value and quality of experience (QoE) is today’s key driver in service provider business strategy. Whether in a “greenfield” or “overlay” environment, sustained market viability demands that existing network infrastructure evolve to withstand the rigors of rolling out and maintaining bandwidth-intensive triple-play applications.

New IP-based video and voice elements in the Ethernet-based core network (supported by MPLS/VPLS technology), the deployment of broadband access networks that bring optical fiber near or to the customer premises (FTTx), as well as new in-home distribution technologies are integral to this evolution. Each facet of infrastructure and application must interconnect seamlessly—from the headend through the home—to ensure the QoE customers expect. Regardless of how the triple-play building blocks are stacked, solid network construction and reliable operation depends on comprehensive planning and a well-defined test and measurement strategy.

JDSU, the industry leader in broadband communications test and measurement solutions, has set the standard for ensuring reliable triple play over FTTx service deployment. The JDSU portfolio of triple-play test and measurement solutions is unrivaled in breadth and depth, and includes field and CO test equipment, centralized test and monitoring solutions, and targeted services that address the full lifecycle of triple-play deployment. Following is a brief overview of JDSU test and service assurance solutions that service providers can rely on to achieve the full potential of successful triple-play networks and service offerings.
JDSU Solutions Test the Triple-Play Network from the Headend through the Home

Test and Monitoring Points for Triple-Play Networks and Services
To help service providers ensure the quality of experience (QoE) customers expect from voice, video, and data services, JDSU offers solutions to test at every point on the network and at each stage of the lifecycle. From economical single-function tools to advanced, multifunction analysis instruments and centralized service assurance solutions, the JDSU portfolio brings providers products that are perfectly matched for the task at hand. Use this diagram to explore the range of possibilities available from JDSU and contact your Sales Engineer to learn more.
Test-Um In-Home Wiring Test Portfolio
Test-Um products are available to meet the full range of in-home test, verification, and troubleshooting needs.

Test-Um LB-255 Ranger™ DSL-Safe Test Set
The LB-255 features all standard butt-set functionality in addition to incorporating advanced features such as DigiView™ DTMF Decode to see and capture digits as a dial-out is in progress, ADLI™ Auto Dial Line Identification inbound/outbound line identification and caller ID testing, Trafixguard™ to sense digital lines and identify under/over voltage conditions, and Insta-Talk™ amplification speaker with simultaneous intercom capability for talking while testing.

Test-Um NT-950 Validator™ Network/Cabling Certifier
The NT-950 Validator uses a four-step methodology—layout, certify, document, and archive—for professional and cost-effective installation in the customer’s home. The Validator measures and presents fast, clear speed and performance results at up to 1 gigabit to ensure that cabling operates as rated and network components operate at maximum efficiency.

Test-Um TP-300 Resi-Tester™ Whole-House Cable Tester
The TP-300 Resi-Tester is a complete solution to identify and verify all wiring environments found in home networking and home automation. It tests and locates CATV, telephone systems, audio cable, security/alarm wiring and network cabling. In addition, the Resi-Tester features multiple input ports and includes a variety of adapter cables so that any wire can be attached and tested.

IVT-600 Voice, Video, Data and IPTV Installation Meter
The IVT-600 is the test solution for IPTV, VoIP, home networking, whole-home DVR and residential gateway installation. It combines a full suite of features for performing essential tasks including coax/cat-5/3 testing, wiremapping, outlet identification, basic Ethernet testing, network capacity verification, POTS-SLIC emulation, tracing, and advanced tone generation.

HST-3000 Handheld Services Tester
The HST-3000 is a handheld, modular platform for copper and multi-service testing. Lightweight, rugged, and battery-operated, the HST-3000 cost-effectively scales to provide an all-in-one solution for field installation, maintenance and troubleshooting of voice, video, and Ethernet/IP services. Specifically for triple-play deployments, the HST includes physical layer through layer 3 testing for 10/100/1000 Mbps Ethernet, ADSL through VDSL2, FTx, and copper testing up to 30 MHz; and application layer testing for high speed Internet, IP QoS, VoIP, and IPTV.
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<tr>
<th>Product Name</th>
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<tr>
<td>SmartClass™ xDSL</td>
<td>✔ ✔ ✔ ✔</td>
<td>The perfect tool for the field engineer installing and maintaining xDSL services. Designed with the field engineer’s environment in mind, the SmartClass xDSL is easy to use, lightweight, and rugged.</td>
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<td>SmartClass Ethernet</td>
<td>✔ ✔ ✔ ✔</td>
<td>A cost-effective and rugged portable test instrument designed for field technicians who are responsible for installing Ethernet and IP services. The SmartClass Ethernet's test capabilities, which range from cable diagnostics to RFC 2544 testing, enable service providers to successfully verify Metro Ethernet SLAs at installation.</td>
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<td>T-BERD®/MTS-6000 Compact Optical Test Platform</td>
<td>✔ ✔</td>
<td>The T-BERD/MTS-6000 is a compact and lightweight test platform designed for the installation and maintenance of fiber networks. Modular in design, the T-BERD/MTS-6000 offers an impressive portfolio of test functionality, with over 40 different fiber modules supporting a wide range of applications, and is a single source for future fiber and photonic testing needs.</td>
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<td>OFI-2000 Bi-directional Optical Loss Tester</td>
<td>✔ ✔</td>
<td>The OFI family is a timesaving platform for automatic bi-direction loss and ORL measurements, with VFL and talk set options. The OFI-PON, working at 1310/1490/1550 nm wavelengths, is the latest addition, extending applications to FTTx services.</td>
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<tr>
<td>SmartClass Optical Handheld Test Tools</td>
<td>✔ ✔</td>
<td>The SmartClass portfolio of test tools provides the triple play of intelligence, power, and portability to characterize the physical layer of FTTx networks. With SmartClass, technicians have the right handheld test tools (including power meters, sources, ORL meters, and talk sets) for the job at hand.</td>
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<td>DTS-200 MPEG-2 Field Instrument</td>
<td>✔ ✔</td>
<td>The DTS-200 Digital Broadcast Field Test Tool is a portable MPEG-2 solution offering full remote operation from the office, lab, or home. It performs real-time analysis to verify stream contents, service plans, PIDs, rates, timing parameters, and ETR-290. It automates testing for baselining with event logs, triggers, and reports. The DTS-200 is a TruStream Digital and IP Video Test and Monitoring Solution.</td>
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<tr>
<td>DTS-330 Digital Broadcast Test Platform</td>
<td>✔ ✔ ✔ ✔</td>
<td>The DTS-330 Digital Broadcast Test Platform is a comprehensive MPEG-2, MPEG-4, DVB, and ATSC test solution providing transport stream generation, capture, and analysis. The DTS-330 is a TruStream™ Digital and IP Video Test and Monitoring Solution.</td>
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A portable field test instrument targeted for the installation and maintenance of Metro Ethernet services, the FST-2802 features a variety of technologies on a widely accepted test platform. Test capabilities include bit error rate testing (BERT) and verifying frame loss and round trip delay (RTD) as per Metro Ethernet service level agreements (SLAs). Advanced features, such as multiple streams or VLAN discovery, enable testing true network traffic conditions.

The T-BERD 8000/MTS-8000 is a field-scalable optical test platform and the industry’s most innovative and cost effective test solution for both metro and FTTx networks. Providing a physical layer test module including OTDR, PMD, and CD, and a service layer test module for GigE and SDH/SONET, it allows thorough testing of FTTx, CWDM, and DWDM networks.

The Transport Module supports 10 Mbps to 10 Gbps Ethernet testing, ensuring that proven test methodologies for Ethernet services remain the same, regardless of the rate. The Transport Module offers a blend of BERT and Ethernet/IP (L1 thru L3) test capabilities in a superior, portable design.

Broadband Tools is a suite of software tools enabling engineers and operations personnel to improve broadband network management including performance optimization of xDSL services, broadband fault isolation and capacity planning and management.

NetAnalyst Test Management OSS is a powerful carrier class test OSS that centralizes crucial test creation and management functions. Service providers can create customized, pre-defined, repeatable tests and schedule them to run automatically, reducing user-induced errors and allowing specific trouble areas to be quickly detected and isolated.

NetOptimize is a carrier-class Performance Management software application. It combines service and network performance monitoring and capacity management with a fully scalable architecture that keeps pace with network and subscriber growth for triple-play services. NetOptimize correlates network, quality, and customer data to fully qualify the customer experience in addition to identifying and proactively predicting network and service problems.

The QT-50 is a lightweight, low cost software agent targeted for deployment at the customer premises. Seamlessly integrated with NetAnalyst and NetOptimize, the QT-50 can generate active test calls to measure the end-to-end QoS proactively and reactively report on customer QoS.
The QT-200 xDSL & Triple-Play probe and NetAnalyst Test Management Software provide unsurpassed ability to pre-qualify, provision, maintain, monitor and troubleshoot DSL triple-play services as well as copper loop and POTS lines.

The QT-600 is a carrier-grade, scalable, multiservice IPTV, VoIP, and Ethernet probe. Through proactive traffic monitoring, the QT-600 detects patterns of QoS degradation and, from a centralized location, quickly segments the network to identify the source of the problem.

The NetComplete Digital & IP Video Service Monitoring Application, featuring the QT-1100, provides in-depth, accurate, end-to-end digital, RF, and IP video monitoring coverage.

The DA-3400 is a portable, multi-technology, 7-layer protocol and IP analyzer for service support engineers tasked with troubleshooting IP layer and above problems. It identifies root cause impairments by providing expert analysis to pinpoint and solve complex IP, VoIP, and application-level problems.

ONMS reduces mean time to repair in fiber networks by providing intelligent dark or out of band fiber monitoring providing accurate location of faults and degradation. Linking monitoring data with network location data enables accurate fault location and immediate dispatch. OFM is a network mapping solution that provides a GIS-based fiber inventory management system. Combining ONMS and OFM provides the highest level of GIS-based fault location.

Consulting Services, Education Services, and Test Equipment Management are among the portfolio of complementary offerings available from JDSU. From network planning and fiber characterization to developing methods and procedures or ensuring that equipment is properly calibrated and tracked, JDSU services ensure the highest return on test equipment investment.