PowerProbe® 30 VoIP Responder

The World's Smallest VoIP Service Quality Tester

- Full Array of Phone Service Metrics and Impairments are Measured
- Low-Cost Responder to Test Fixed and Mobile Network Voice Quality
- PDA or Mobile Handheld Device can Launch Tests
- Pass / Fail Test Results to Validate Service Availability
- Standards-Based Voice Quality Measurements
- Portable & Compact

Provisioning and Service Quality Monitoring

Connect the PowerProbe 30 to any 2-wire phone jack and get more than 60 service level measurements in less than a minute.

Next-generation networks are more heterogeneous than ever (PSTN, VoIP, wireless, etc.), making it harder to assess service quality and troubleshoot customer issues. The PowerProbe 30 can easily be connected anywhere in your access network to perform carrier and service provider benchmarking over multiple network technologies.

Integration with the DirectQuality® Service Level Assurance platform provides standards-based testing, centralized data logging and reporting, third-party OSS integration, and service level classification. Test plans make test data consistent and allow tests to be run automatically.

Test results help to isolate if the problem is in the core, access, or in the customer's equipment.

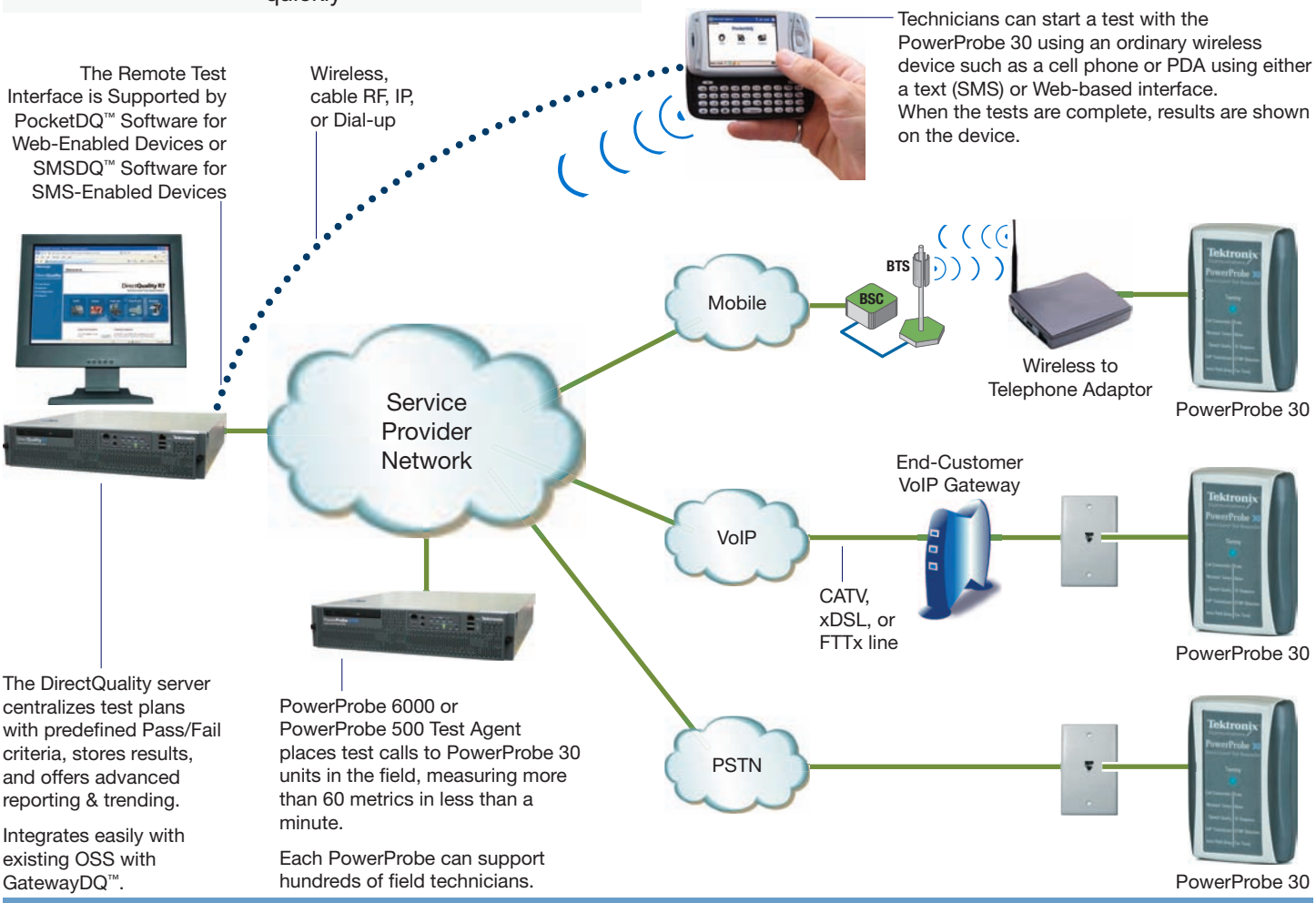
Features & Benefits	Applications
▪ Portable, line powered, light weight, and compact for field use ▪ High feature to cost ratio ▪ Compatible with Tektronix PocketDQ™ and SMSDQ™ to launch tests with a mobile phone or Web-enabled PDA ▪ Centrally-stored test results for future reference and analysis ▪ Multiple metrics to locate faults in the core network or in the customer premises	▪ Day-of-installation verification: On Demand testing is perfect for a field technician to test and verify an installation, and then quickly move on to the next installation ▪ Service quality tests to troubleshoot transient issues: The responder can be left in a data closet at the customer's premises ▪ On-site test support for field technicians

Tektronix® Communications

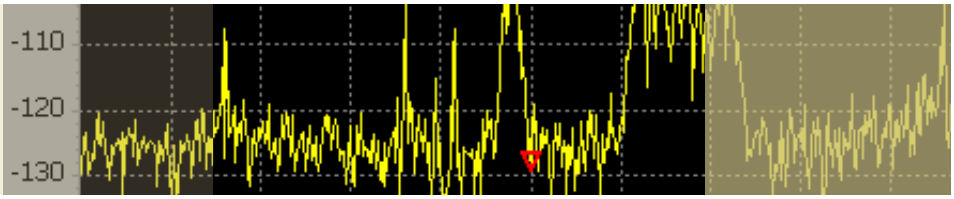
Field Testing Configurations and Benefits

Simple & Cost Effective	
Line powered	Connects to any standard POTS telephone jack to start testing
Clear Results	
Server-based test system	Provides results against standardized Pass/Fail criteria - with advanced drill-through for troubleshooting Technicians and NOC personnel can share centrally stored test results to resolve service issues quickly

Fast	
Single-call, multiple-technology testing	Conduct 60 measurements in less than a minute
Test Plan Automation	
Customize the tests performed with the PowerProbe 30	Automate your existing test plans for consistent execution
Centralized test planning	Ensure that your technicians will need only minimal training



Test Architecture



Test Measurements

Speech Quality
- PESQ LQ MOS
- VQES MOS
- R Factor CQ & LQ
- Unsatisfied Users Ratio
- Speech Power, Loss & Distortion

Noise
- C-Message Noise
- Wideband Noise
- Noise Gain
- C-Notch Noise Gain
- Signal-To-Noise Ratio

Echo
- Path Loss & Delay

Voice Transmission
- Frame Muting Ratio
- Comfort Noise
- Clipping Events (Front-End, Back-End, & In-Between)
- Clipping Ratio (Front-End, Back-End, & In-Between)
- Average Clipping Duration (Front-End, Back-End, & In-Between)
- Hang-Over Events
- Average Hang-Over Time

RTP Statistics
- Packets Sent & Received
- Packet Loss, Bursts, & Gaps
- Packets Out of Order & Discarded
- RTCP Reporting

Jitter
- Average Jitter
- Jitter Buffer Size
- Jitter Buffer Usage

Delay
- Voice Path Delay
- Round-Trip Delay

Frequency Response
- Loss (1100Hz, 2100Hz)
- RSL (1100Hz, 2100Hz)

DTMF Detection & Validation
- 0 to 9, *, #

Fax Tone Detection
- CNG Tone Detection & Duration
- CED Tone Detection & Duration

Network Timers
- Dial Tone Delay
- Post Dial Delay
- Billing Duration
- Call Duration

Connection Status
- Call Disposition Code
- PRI Cause Number & Location
- MGCP Return Code

NOTE: Test measurement availability varies according to the network protocol the PowerProbe 30 is used with.

Front

Testing is in progress LED

Back

Self-test push-button

Self-test LED

RJ-11 test connection

PowerProbe 30 Indicators, Controls, and Connectors

Specifications

Power Input
- Standard POTS Telephone Loop

Loop Current
- 21 to 90 mA

POTS Test Connection
- Connector Type: RJ-11
- Pin 4: TIP, Pin 3: RING

Testing LED
- Probe is off-hook and testing is underway

Self Test LED
- A self test is activated every time the responder goes off hook or activated by the user pressing the self-test push-button
- Self-test LED shows if the self-test or power-up test has passed (LED is on or flashing)

Dimensions
- Height x Width x Depth
- 3.72 x 2.50 x 1.10 inches
- 95 x 63 x 28 mm

Weight
- 2.8 oz.
- 80 g

Operating Temperature
- 32 °F to 105 °F
- 0 °C to 40 °C

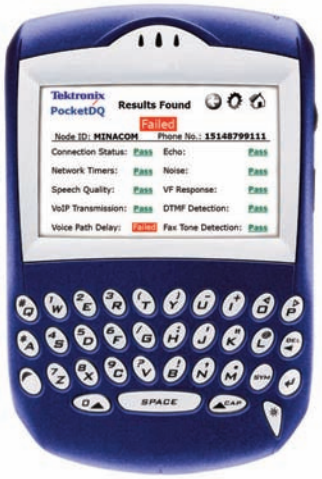
Relative Humidity
- 5% to 85% non-condensing

DirectQuality® Integration

DirectQuality provides complete service level test automation from test call generation to Quality of Service (QoS) troubleshooting. Our Web-based OSS features color-coded service level thresholds for reporting, alarming and analysis. With DirectQuality (DQ), users can schedule tests at any hour or initiate on-demand testing at customer premises.

PocketDQ™ Integration

When you have PocketDQ software running on the DirectQuality server, it allows you to remotely initiate an automated test call to the PowerProbe 30 through a wireless Web-enabled device such as a PDA or cell phone. PocketDQ presents results in a meaningful and simple Web report format. Eliminate guess work and accelerate troubleshooting by drilling down from QoS indexes to accurately and effectively troubleshoot network issues.



SMSDQ™ Integration

When you have SMSDQ software running on the DirectQuality server, it allows you to remotely initiate a test call to the PowerProbe 30 using SMS text messages. Simple Pass/Fail test results are sent in a return SMS text message.

About Tektronix:

Tektronix has more than 60 years of experience in providing network operators and equipment manufacturers a comprehensive and unparalleled suite of network diagnostics and management solutions for fixed, mobile, IP and converged multi-service networks.

These solutions support such architectures and applications as fixed mobile convergence, IMS, broadband wireless access, WiMAX, VoIP and triple play, including IPTV.

For Further Information:

Tektronix maintains a comprehensive, constantly expanding collection of application notes, technical briefs and other resources to help engineers working on the cutting edge of technology.

Please visit www.tektronix.com/communications

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