

# **SPIRENT NOMAD HD**

**VOICE OUALITY ANALYSIS FOR HD VOICE AND VOLTE SERVICES** 

# CALL AND VOICE MEASUREMENT SYSTEM

Spirent's Nomad HD provides a comprehensive package for HD voice quality measurements and call performance testing to support the evolution of the VoLTE standard. As an optional upgrade to the Fit4Launch Call and Voice Measurement System, Nomad HD is HD-ready and POLQA-certified and offers the most cost-effective and reliable approach for objectively determining whether HD Voice and VoLTE services are delivering the required user experience.





## **BENEFITS**

- Provides a consistent and reliable approach for objectively measuring VoLTE voice services under real-world conditions
- Simultaneously measures VoLTE voice quality & call performance
- Supports all mobile devices, regardless of OS or technology
- Does not require any custom software on the device
- Deployable in both lab and field environments
- Easy to use and cost-effective method of determining whether voice services are delivering the required user experience

### **KEY FEATURES**

- Significantly expanded set of codecs, including AMR-WB, EVRC, EVRC-WB, Skype / SLIK, G.711 and G.729
- Designed to handle more complex end-to-end network architectures and quality management techniques such as smart loss concealment and time stretching
- Two operational modes to distinctly address narrowband and super-wideband communication
- Three-fold increase in evaluation set used compared to PESQ, resulting in considerably smaller residual prediction errors even as the application range has expanded substantially
- Seamless upgrade path from, and backward compatibility with, PESQ

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# ADVANTAGES OF POLQA

The worldwide prevailing standard for mobile voice quality analysis has been ITU-T P.862, known as Perceptual Evaluation of Speech Quality (PESQ). PESQ implements automated testing of telecommunications using actual speech samples, comparison of the reference signal (transmitting side) to the degraded signal (listening side), and generation of mean opinion scores (MOS) to model subjective listening patterns.

This technique has been widely adopted due to its capability to automate collection of large sample sets simulating real-world subscriber experience.

As network technologies mature and evolve, the drivers of performance change, and new methodologies for measuring and assuring quality are required. PESQ is logically being succeeded by ITU-T P.863, Perceptual Objective Listening Quality Analysis (POLQA).

POLQA provides more robust quality predictions for:

- Cross-technology quality benchmarking (such as GSM vs. CDMA)
- Noise reduction and voice quality enhancement
- Time-scaling, unified communication and VolP
- Non-optimal presentation levels
- Filtering and spectral shaping
- Recordings made at an ear simulator

PESQ VS POLQA			
	PESQ	POLQA	
Codecs	• AMR • EFR	<ul><li>AMR</li><li>AMR-WB</li><li>EFR</li><li>EVRC</li><li>EVRC-B</li><li>EVRC-WB</li></ul>	<ul><li>iLBC</li><li>AMB+</li><li>AAC</li><li>Skype / SLIK</li><li>G.711</li><li>G.729</li></ul>
Reference Speech Material (sampling frequency)	8 kHz	• 8 kHz • 48 kHz	
Applications	• POTS • VoIP • 3G	<ul><li>HD Voice</li><li>Voice</li><li>Enhancement</li><li>Devices</li></ul>	<ul><li>Skype calls</li><li>Benchmarking CDMA and GSM</li></ul>



Nomad HD is an upgrade for VoLTE voice quality testing and requires new hardware that is HD-ready and POLQA-certified.

#### TECHNICAL SPECIFICATIONS

**Specification** 

ITU-T P.863 Certified

Wideband and legacy ports for enhanced performance while maintaining backwards compatibility

Wideband ports provide 20 KHz bandwidth and superior THD performance

Bluetooth Hands-free profile v1.6 support

Supports mixed mode operation with some channels connected via analog and others via Bluetooth

Supports both CVSD and mSBC Bluetooth codecs

Bluetooth protocol stack runs on host PC for maximum flexibility and easy upgrades

4 MB per channel of full-duplex on-board buffering provides over 20 seconds of drop-out protection when the host PC is busy

Selectable sample rates of 8, 16, 32, and 48 KHz

24-bit sample width

Improved ESD protection on USB ports

# **SPIRENT SERVICES**

Spirent Global Services provides a variety of professional services, support services and education services—all focused on helping customers meet their complex testing and service assurance requirements. For more information, visit the Global Services website at <a href="https://www.spirent.com">www.spirent.com</a> or contact your Spirent sales representative.

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