

▶ **EVERY DAY VOICE QUALITY**

Trust PESQ—ITU's Approved Voice Quality Algorithm

XQi is based on the International Telecommunication Union (ITU) algorithm - P.862 PESQ. PESQ is an internationally recognized standard used to objectively test voice quality based on perceptual techniques that model both the human ear (perceptual modeling) and the judgment behavior of a test subject (cognitive modeling).

Collect voice quality daily with X-TEL's XQi voice quality system.

XQi is X-TEL's modular voice quality tool designed to be used every day, not just for periodic benchmarking. Test every day to address the factors that affect quality, including low bit rate coding, circuit or packet errors, background noise, silence suppression and filtering by handsets or the access network.

▶ **PROVEN ITU ALGORITHM**

Automatic Level Adjustment—no calibration required

Input Filtering—compensates for handset or network filtering

Automatic Time Alignment

Auditory Transform—mimics key properties of human hearing.

Both Disturbance Processing and Cognitive Modeling

▶ **XQi Voice Quality System**

▶ **BENEFITS**

Increase Network Service Quality

ITU Approved Voice Quality Algorithm

Cost Effective Implementation

▶ **FEATURES**

Utilizes ITU Approved PESQ Algorithm

Measures Uplink and Downlink Quality

Run Automated Measurement and Analysis Reports

Supports GSM, CDMA, iDEN, WCDMA and TDMA



XQI SYSTEM HIGHLIGHTS

- ▶ Voice quality scoring based on ITU P.862 standard: PESQ
- ▶ Monitor, record, and plot voice quality scoring and metrics in conjunction with all phone data and events for in-depth evaluation of system performance
- ▶ Auto call generation
- ▶ Multiple phone connection support
- ▶ Multiple technology support
- ▶ Real-time and playback plotting of voice quality scoring via X-TEL's Rush Street
- ▶ Spectrogram display of the speech audio signal



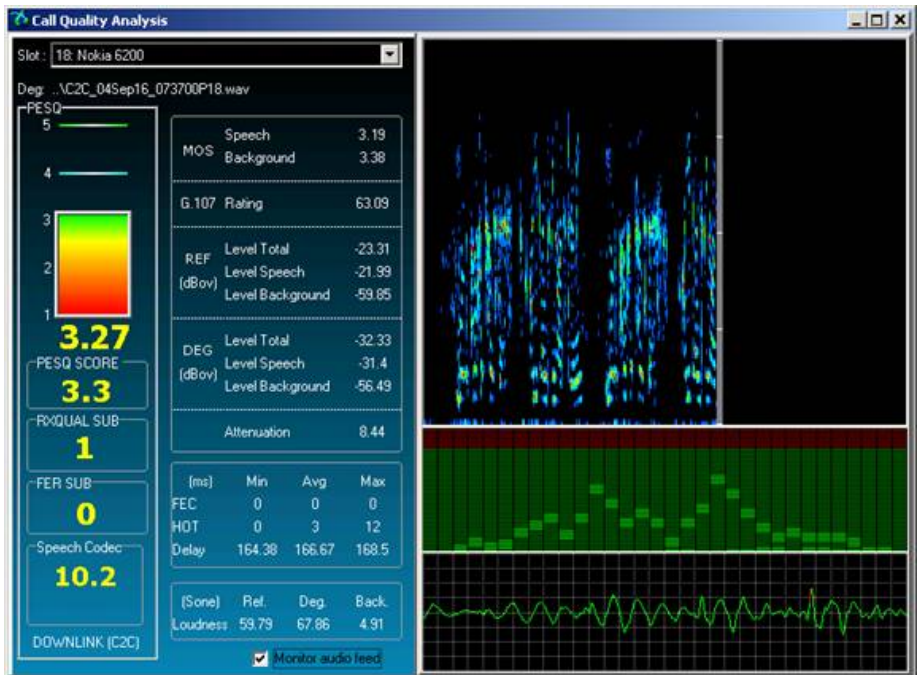
X-TEL's XQi system provides voice quality analysis functionality that integrates with X-TEL's current data collection software. Utilizing the ITU voice quality standard, P.862, PESQ (Perceptual Evaluation of Speech Quality), XQi provides objective evaluation of speech audio signals based on human hearing perception models. This state-of-art solution is the latest internationally recognized standard for measuring voice quality. Don't accept substitutes.

Key features of XQi include the standardized ITU P.862 PESQ (Perceptual Evaluation of Speech Quality) voice quality scoring, and multiple phone connections, mobile-to-PSTN and mobile-to-mobile testing. Voice quality data can be viewed and plotted in real-time, as well as analyzed in post-processing. X-TEL's XQi system is compatible across all supported technologies.

Contact X-TEL for more information.

KEY MEASUREMENTS

- ▶ PESQ Score
- ▶ Average FER_SUB
- ▶ Average Worst CTOA
- ▶ Speech codec (AMR)
- ▶ MOS score
- ▶ G.107 Rating
- ▶ Reference speech signal level
- ▶ Degraded speech signal level
- ▶ Reference/Degraded Attenuation
- ▶ Front End Clipping (FEC)
- ▶ Hold Over Time (HOT)
- ▶ Speech signal delay
- ▶ Background Noise Measurement
- ▶ Echo Measurement



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