DOEWE
TEST SOLUTION EXPERT

COMPANY PROFILE

Doewe Technologies, headquartered in Beijing, has been operating for a decade and currently has branches including the Beijing R&D Center, Chengdu R&D Center, Doewe Shanghai, Doewe Shenzhen, and Doewe Hong Kong. The company is fully committed to building its independent brand "Doewe," with its business covering two main categories: Advanced Sensing Measurement and Control (ASMC) and Professional Test and Measurement Solutions (PTMS).

The ASMC product line provides innovative high-precision sensing acquisition and data analytics solutions. PTMS focuses on industry-specific test and measurement solutions for audio, video, and RF applications. It has established the 5XC product system, serving sectors such as transportation, broadcasting, automotive electronics, consumer electronics, and university research institutes.

Through relentless effort, several of the company's products have become benchmark test instruments in their respective industries. Doewe Technologies also holds multiple core patents and software copyrights, participates in relevant industry standards working groups, and contributes to the formulation of national and industry standards. Building on past achievements, Doewe continues to increase its R&D investment. We have never forgotten our original aspiration, firmly believing that only profound technological accumulation creates value. We persistently pursue innovation in test and measurement technology, dedicated to technology development, application software services, and research in test and measurement solutions.

Leveraging its Beijing headquarters, related technical centers, and subsidiaries, Doewe Technologies has gradually established a nationwide pre-sales and after-sales service network, providing customers with professional technical consultation. Guided by the principles of "Rigorous, Efficient, Professional, Innovative," Doewe Technologies will continue steadfastly on this path, living up to the trust of every customer.

The journey ahead is long and challenging. We will accompany you on this path of growth to create a new future of technology together.

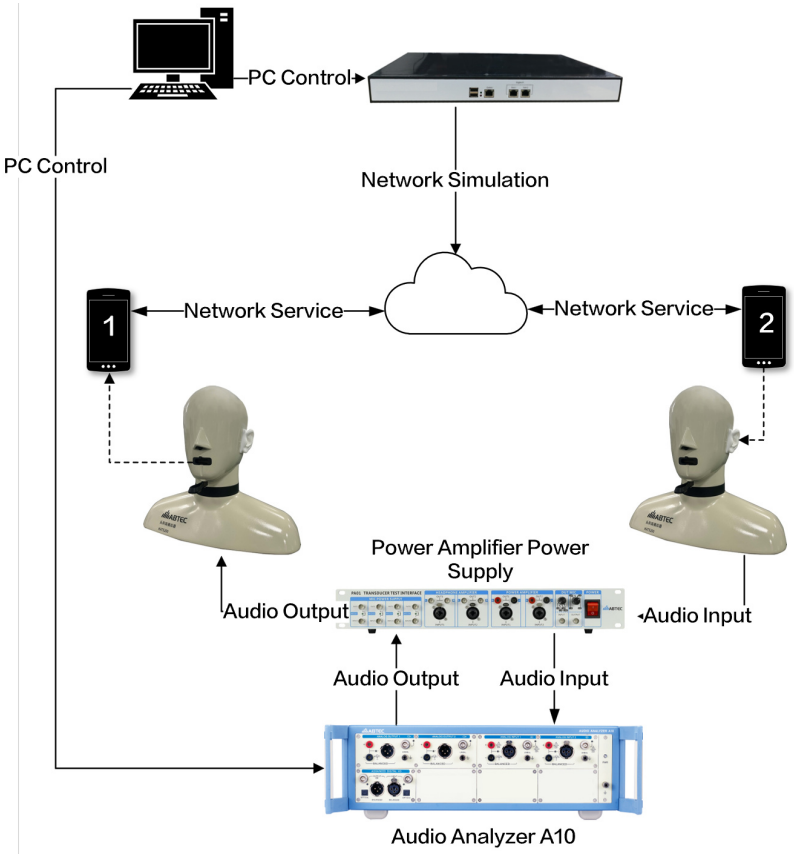
-EN-V2.0���

overview

System Overview

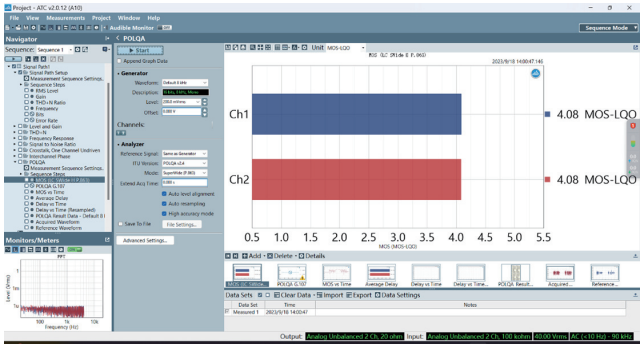
The core function of the Application POLQA Test System (APTS), a call software transmission sound quality testing system, is to reflect the audio transmission quality of real-time call software during use through POLQA (Perceptual Objective Listening Quality Assessment) subjective sound quality evaluation tests. The core measurement devices of the system include an audio analyzer and a network impairment simulator. Since real-time call software transmits signals based on mobile network links, the network impairment simulator supporting this testing system can add different network impacts to the transmission links, simulate the software's usage conditions in various network environments, and thereby measure the audio transmission quality closer to real-world application scenarios.

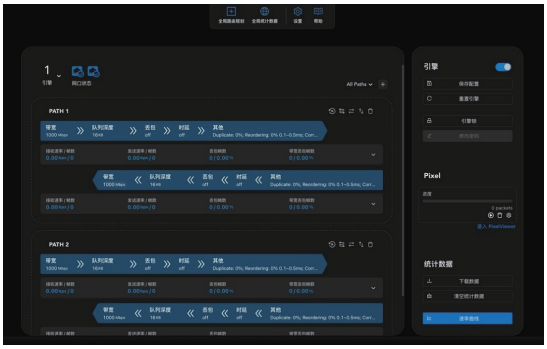
System Block Diagram



System Advantages

- Supports the POLQA test option (based on ITU-T P.863), uses the POLQA 3.0 algorithm to conduct subjective evaluation of speech quality for broadband voice devices or devices with acoustic coupling, and supports ultra-high-definition voice, 4G, 5G, VoLTE and VoNR technologies;
- POLQA 3.0 is optimized for complex noise environments and advanced speech enhancement technologies. It provides full - bandwidth MOS scoring, improves time alignment and noise processing, and meets the requirements of 5G and future speech technologies;
- High-performance hardware testing equipment with a typical residual THD+N (20kHz BW) value of < -120dB (1kHz, 2.0V), which is an ideal testing device for the R&D stage of audio products;
- The equipment is controlled via software, supporting the automatic generation of test reports that can be exported in multiple formats, which facilitates users in saving test results.
- The audio analyzer is equipped with abundant testing and measurement functions. In addition to subjective sound quality evaluation, it also supports the testing of various audio indicators such as signal-to-noise ratio and frequency response, and can meet the testing needs of more audio-related products such as headphones, speakers, and microphones;
- The single simulation engine of the network impairment emulator can simulate up to 15 independent virtual links, meeting the needs of multi-task parallel testing. It features flexibly configurable delay and jitter, rich packet loss patterns, error patterns, and a packet classifier;
- It supports recording the changes in network bandwidth, delay, and packet loss rate over a period of time. The recorded data can be imported into the device for playback, accurately reproducing the real network's bandwidth, delay, and packet loss rate on the device;
- Provide fully open APIs to facilitate integration with various test automation tools, improve testing efficiency, and liberate productivity;
- Configure comprehensive testing equipment and accessories to facilitate the rapid setup of testing environments and testing.

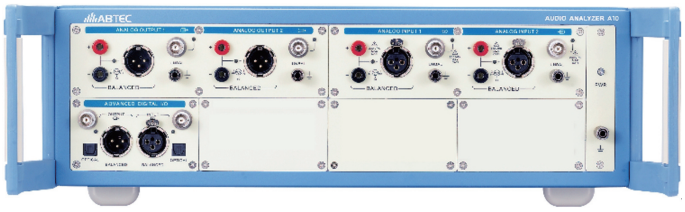




The typical test interfaces of the audio analyzer (left) and the network impairment simulator (right)

Hardware Introduction

Audio Analyzer



- The standard configuration supports digital interfaces such as SPDIF, TOSLINK, AES, and EBU;
- It supports the expansion of multiple digital interfaces such as BT, HDMI, I²S, and PDM;
- The complete and powerful functions of the electroacoustic analyzer;
- Code-free Automation and Comprehensive API Interfaces;
- Support LabVIEW, VB.NET, C#.NET;
- Automatically generate test reports in various formats;
- It has as many as 60 test functions, including oscilloscope, spectrum analyzer, continuous fast scanning, etc.

Network Impairment Emulator

- The max BW of a single engine is 1000 Mbps;
- The max number of independent virtual links that can be simulated by a single engine is 15;
- The single-engine message processing capability is 0.3 Mpps;
- Plug and play, no need to install applications, and quickly issue damage configurations through the web GUI;
- Equipped with a diverse range of packet loss patterns, bit error patterns, and packet classifiers;
- Open API, which supports integration with various test automation tools to improve test efficiency.

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