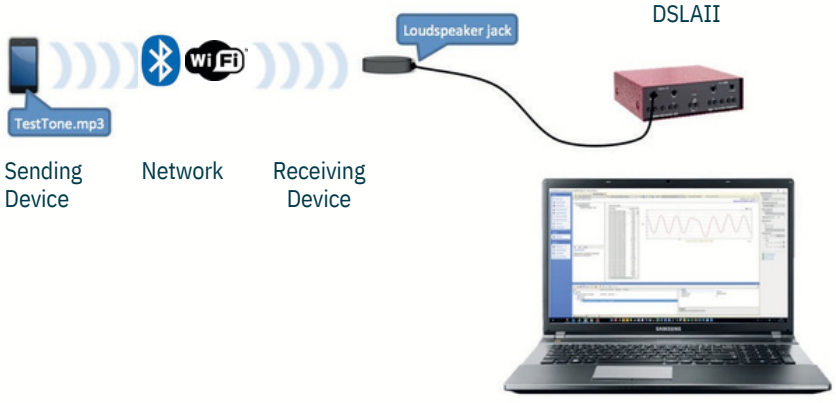
MultiDSLA Audio Streaming Integrity

Designed for continuous assessment of audio streaming quality over Bluetooth and Wi-Fi

The Audio Streaming Integrity (ASI) metric is an optional feature of the Opale MultiDSLA test system. It detects, qualifies, records, and logs any breaks or distortions in audio continuity over the test period. ASI provides a cumulative count of anomalies along with their duration and precise timestamps, offering detailed insight into audio performance issues.

Local Audio Streaming

The use of cordless headphones and loudspeakers is rapidly increasing, driven by parallel advancements in Bluetooth audio codecs and Wi-Fi streaming technologies.
Many of these headphones and loudspeakers are high-end products, typically purchased by users seeking hi-fi performance for music listening.
Common domestic audio streaming applications include Bluetooth and Wi-Fi streaming of music from a local server or from an online server accessed via wired or wireless connections. Additionally, streaming music from a mobile device to a vehicle audio system over Bluetooth also falls within this category.



Key points

Long-Duration Testing
Audio Streaming Integrity must be performed typically over 24 to 48 hours of continuous test periods.

Automatic
Tests run automatically in the background, allowing QA staff to focus on higher-value tasks and eliminating the need for time-consuming manual test iterations

Back In Time Troubleshooting
ASI logs and measures each single anomaly, enabling back-in-time analysis of every anomaly identifi ed.

End-User Experience
ASI stores recordings of each anomaly, allowing playback and subjective assessment of the audible effect.

End User Satisfaction
Streaming errors often result in audible noises which disrupt listening pleasure and can give rise to acute user dissatisfaction.

Applications

- Validation of local streaming performance.
- Evaluation of Bluetooth pairing combinations.
- Characterisation of Bluetooth and Wi-Fi range.

Designed for

Quality Assurance Lab teams validating products such as:

- Media services subscription
- Mobile phones and tablets
- Home media servers
- Wireless loudspeakers and headphones
- Automotive bluetooth audio systems

Why Streaming Integrity?

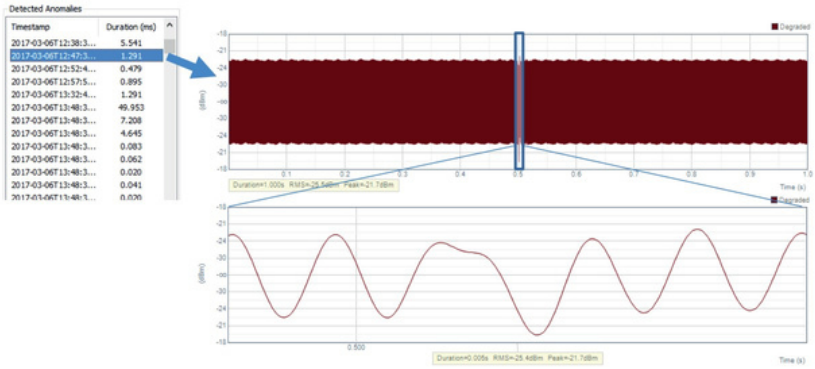
Under ideal conditions, the streaming process has no impact on the listening experience, which is primarily influenced by the previously mentioned factors. However, under non-ideal conditions, the streaming process can introduce interruptions or breaks in the decoded audio delivered to loudspeakers or headphones. Common causes of such non-ideal performance include:

- Unsuitable paring combinations
- Radio-frequency interference - e.g. Wi-Fi interference to Bluetooth
- Multi-path signal fading due to radio signal reflections
- Equipment used close to the limit of its range

Several factors combine to influence the overall listening experience, including the performance of the audio codec used, the inherent quality of the transducers and their enclosures, the nature of the music being played, and the listener's expectations.

In addition to these, one critical factor can have a significant impact on the quality of experience—the integrity of the streaming mechanism. In other words, it is the system's ability to deliver audio to headphones or loudspeakers without interruptions or discontinuities.

We have developed an innovative KPI measurement known as Audio Streaming Integrity (ASI) and integrated it into our flagship test platform, MultiDSLA. This provides accurate evaluation of streaming performance over Bluetooth and Wi-Fi connections.



Specifications		
Indicator	Duration	Per anomaly
	Timestamp	
	Recording (1s)	
Sample Rate	8K, 16K, 48K samples per second	
Test Signal Frequency Range	150Hz – 650Hz	at 8k rate
	150Hz – 1.3kHz	at 16k rate
	150Hz – 3.9kHz	at 48k rate
Order code	000107	ASI