

Jabra Engage 50 II claim verification

1. Summary

FORCE Technology has verified the measurements and calculations, which contribute towards substantiating the audio and call related parts of the following claim. The claim wording is created by Jabra, for their newly released USB office headset, Jabra Engage 50 II.

Details of associated disclaimers are given in section 4.

Product	Claim
Jabra Engage 50 II	"The best headset for clear customer calls"

2. Method

Jabra Engage 50 II was tested against the two largest market leading manufacturers in the business, using 4 major competing products on the market.

Each product was measured on several audio or call related parameters, and a weighted average score was calculated. The measurements cover a wide range of audio characteristics that are relevant to corded headset usage and performance. A specialist from FORCE Technology monitored and verified all measurements, to ensure that all products were measured correctly, in the same way and under identical conditions.

FORCE Technology performed the listening test, including recordings, which is part of this claim.

The included measures, which are used as base for this claim are:

- **Microphone performance (Tx)**
 - POLQA.Tx No background noise
 - 3QUEST G-MOS Call centric background noise (average of three microphone positions)
- **Flex microphone position performance (Tx)**
 - Tx distractor attenuation, average of 3 microphone positions.
 - POLQA.Tx average of 3 microphone positions, No background noise
- **Speaker performance in communication mode (Rx)**
 - Subjective listening test
- **Passive noise cancellation**
 - Measure of the passive noise cancellation in the device
- **Real time call insights**
 - Does the product advice the user in real time of their own microphone audio quality.

Table 1 below shows the overall weighting of each parameter when the average is calculated, and the weighting of each measure, when a parameter is comprised of more than one measurement. All parameters and sub-measures were selected by Jabra. Weightings are mutually agreed by Jabra and FORCE Technology.

Measure	Weighting
Microphone performance (Tx)	20%
POLQA.Tx No background noise	50%
POLQA.Tx G-MOS Call centric	50%
Flex Microphone position performance	20%
Tx Distractor attenuation, average of three distractor positions	50%
POLQA.Tx average of 3 microphone positions, No background noise	50%
Speaker performance in communication mode (Rx)	20%
Listening test	100%
Passive noise cancellation	20%
Passive noise cancellation	100%
Real-time call insights Yes/No	20%
Real-time call insights Yes/No	100%

Table 1 - Weightings of included parameters and sub-measures

Based on these measures, an overall score was calculated for the weighted parameters.

Jabra Engage 50 II scored significantly higher than any of the other tested products.

3. Definitions

ITU-T P.863 "POLQA" - Perceptual Objective Listening Quality Analysis – ITU-T Standard that covers a model to predict speech quality by means of analyzing digital speech signals.

Tx – Uplink/Transmit, meaning the signal which is captured by the device’s microphone.

Rx – Downlink/Receive, meaning the signal which is reproduced by the device’s loudspeaker (in this case the headphones).

Listening test – The average score for each product from a double-blind listening test with 33 consumers within the product target group. Averaged across 6 speech samples, recorded in silence and background noise conditions. Devices were loudness equalized. Speech was played through the headset speaker and recorded on a B&K HATS 5128C.

Audio playback was from Sennheiser HD650 headphones. Randomization, audio presentation, data collection and analysis was handled by SenseLabOnline v.5.0.0.

Test persons rated the overall quality on a scale from 1 (Bad), to 5 (Excellent) a total of 120 times pr. test person. A total of 3960 data points were collected.

Distractor attenuation – Distracting speakers are added in three different angles (0, 45, 90 degrees) 60cm from the mouth of the primary speaker (the HATS wearing the headset), and the headsets’ ability to attenuate the distractor, and maintain signal from the primary speaker, is measured.

G-MOS – Overall Mean opinion score (Defined in ETSI EG 202 396-3). This measure is an average of several sentences and noise conditions. The implementation from HeadAcoustics 3QUEST is used in this case.

Passive noise cancellation – Measured in reverberation chamber. The loudness (in Phon) is measured inside the headset, under exposure to diffuse field pink noise. The loudness is compared with the loudness (in Phon) without headset, and a reduction value is calculated in Phon.

Real time call insights – By lookup in product datasheet/manufacturer website. Does the product provide real time call quality guidance (i.e. by suggesting changes to the boom arm position) or similar. The answer is either yes or no.

4. Disclaimers

This claim relates to audio and call performance only.

5. Document validation

FORCE Technology confirms the correct performance of measurements and calculations stated in this document.

FORCE Technology confirms that given associated disclaimers stated in section 4. On the 15th of August 2022 the claim within this document for the Jabra Engage 50 II is accurate, in terms of validity of measurements and calculations it is based upon.

Authorized by FORCE Technology