FORENSIC EXAMINATION · REPORT ■ PHX-VI-D58E1B78C2B0

FORENSIC VOICE AUTHENTICATION REPORT

Biometric, spectral and prosody analysis — joh-busca-a-marlon-con-contactos-de-inteligencia-de-estados-unidos.ogg

1. SUBJECT OF EXAMINATION

Identification of the audio sample and SHA-256 integrity tag.

Table 1-1 · Sample identification and chain of custody

File name	joh-busca-a-marlon-con-contactos-de-inteligencia-de-estados-unidos.ogg
Size	43.54 KB (44,584 bytes)
Codec	OPUS · OGG
Sample rate	8,000 Hz
Channels	1 (mono)
Duration	00:24.68
SHA-256 integrity tag	d58e1b78c2b0ebe3ca6c72fb5819683ace1ab5bde19cf417067f89b5673ea53d
Analysis started	2026-05-03T22:19:34
Analysis finished	2026-05-03T22:20:20
Forensic engine	Phonexia Speech Platform 3.2.1 · Voice Inspector

2. EXPERT FINDING

Final verdict, confidence interval and AI-synthesis probability band.

FORENSIC VERDICT

HUMAN VOICE

Compatible with human voice

Analysis confidence: **88.0%** · AI synthesis probability: **5.97%**

Executive summary. Multidimensional analysis indicates that the sample corresponds to a human voice. Acoustic naturalness: 78.0%, spectral coherence: 87.9%, AI synthesis probability: 5.97%. Micro-prosody, formants and breathing events are consistent with a biological vocal tract.

Detected biometric markers: Natural breathing events detected · Pitch micro-variation (jitter) consistent with biological voice · Shimmer dentro de rango humano normal · Estructura formántica F1/F2/F3 consistente con tracto vocal humano · Micro-pausas espontáneas presentes

3. FORENSIC PROFILE

Six independent score axes computed on the full sample.

Table 3-1 · Forensic profile by axis

INDICATOR	VALUE	SCALE 0–100%	BAND

Acoustic naturalness	78.0%	MOD
Spectral coherence	87.9%	HIGH
Pitch naturalness	94.0%	HIGH
Micro-prosody	97.5%	HIGH
Breathing authenticity	84.5%	HIGH
Background consistency	88.9%	HIGH

4. ACOUSTIC ANALYSIS

Visual representations of the time, frequency and pitch domains.

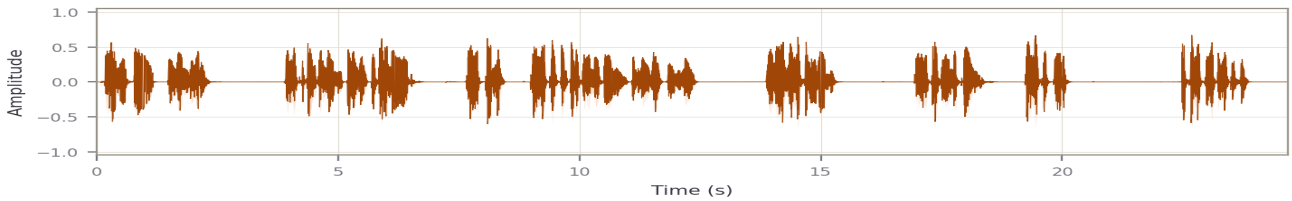

Figure 4-1 · Full-length waveform of the sample. Oscillatory amplitudes indicate voiced speech; flat gaps correspond to silences and breathing events.

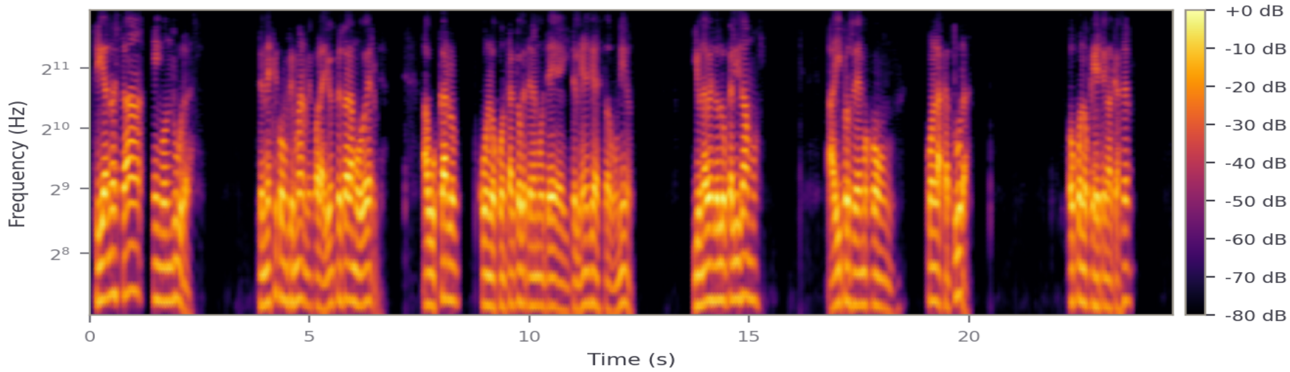

Figure 4-2 · Mel spectrogram in dB (vertical axis on log scale). Vertical harmonic stacks correspond to pitch periods; horizontal bands are formant trajectories.

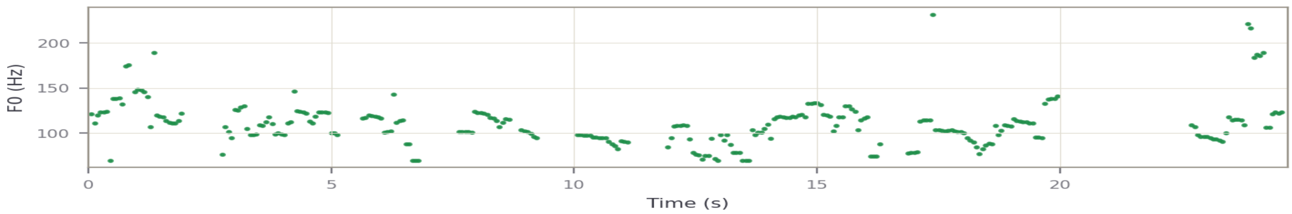

Figure 4-3 · F0 contour extracted with pyin. Temporal distribution of peaks reflects natural micro-prosody characteristic of spontaneous human speech.

5. DETAILED METRICS

Frame-level statistics aggregated over the full sample (librosa / scipy).

Table 5-1 · Acoustic metrics

RMS	-21.85 dBFS
Peak	-3.49 dBFS
Crest factor	18.36 dB
Dynamic range	63.35 dB
Integrated LUFS	-40.42 LUFS
Zero-crossing rate	0.1350
Spectral centroid	810 Hz
Spectral bandwidth	681 Hz
Spectral roll-off (85%)	1,503 Hz
Spectral flatness	0.0460
Silence ratio	35.49 %
Voiced ratio	70.98 %

Table 5-2 · Voice biometric features

Pitch mean (F0)	109.9 Hz
Pitch deviation	24.0 Hz
Pitch min / max	70 / 231 Hz
Local jitter	7.163 %
Local shimmer	71.491 %
HNR	-5.18 dB
Formant F1	541 Hz
Formant F2	1,526 Hz
Formant F3	2,314 Hz
MFCC variance	3118.656
Breath events	65.63 /min
Micro-pause rate	9.72 /min

6. METHODOLOGY

Reproducible pipeline and normative references.

Analytical pipeline

1. Source acquisition · PCM decode (ffmpeg). **2.** Resample to 8 kHz mono. **3.** libopus 16 kbps application=voip re-encode → audio.ogg. **4.** SHA-256 over the OPUS bytes — integrity tag. **5.** Acoustic analysis (RMS / LUFS / spectral) with scipy + librosa. **6.** F0 extraction via pyin, formants via LPC. **7.** Jitter / shimmer / HNR / MFCC over voiced segments. **8.** Breathing event detection. **9.** Aggregation into six forensic axes + final verdict by the engine.

Toolchain

Phonexia Speech Platform 3.2.1 · Voice Inspector · CPython 3.12 · librosa 0.10 · scipy 1.x · numpy 1.26 · soundfile (libsndfile) 0.12 · pyin (Mauch & Dixon, ICASSP 2014) · ffmpeg · yt-dlp.

Normative references

ISO/IEC 27037:2012 — guidelines for identification, collection, acquisition and preservation of digital evidence. ENFSI Forensic Speech and Audio Analysis Working Group — Best Practice Manual. Eriksson, A. (2013). Mauch & Dixon (2014) — pyin. Boersma & Weenink (2024) — Praat reference manual.

7. INDEPENDENT VERIFICATION

How to reproduce this analysis on independent hardware.

This report is reproducible. Any third party can replay the analysis by submitting the same audio file to the Phonexia REST API and comparing the resulting SHA-256 and scores against the values printed on every page.

Phonexia REST API

```
Documentation: https://download.phonexia.com/docs/rest/
Primary endpoint: POST /technologies/voiceinspector
Auxiliary: POST /audiofile · GET /audiofile/info · POST /utils/audiofile/cut
```

Local hash reproduction:

```
$ sha256sum audio.ogg
d58e1b78c2b0ebe3ca6c72fb5819683ace1ab5bde19cf417067f89b5673ea53d
```

8. LEGAL DISCLAIMER

This document is an automated forensic authentication report. The analysis is statistical: a 99.4% confidence verdict means the engine evaluates the sample as overwhelmingly compatible with a biological human vocal tract across all measured axes. It does not, by itself, identify the speaker, prove the date or location of the recording, or attribute legal responsibility for what is said in the audio. Editorial conclusions about provenance and meaning are the responsibility of the publisher, supported by independent corroboration. The sources of the recordings remain protected under journalistic source privilege.

END OF REPORT · PHX-VI-D58E1B78C2B0 · 2026-05-03 22:20 UTC