

Extended Certificate - Full MIR Parameters

for

align.mp3

Series PG No. 000001

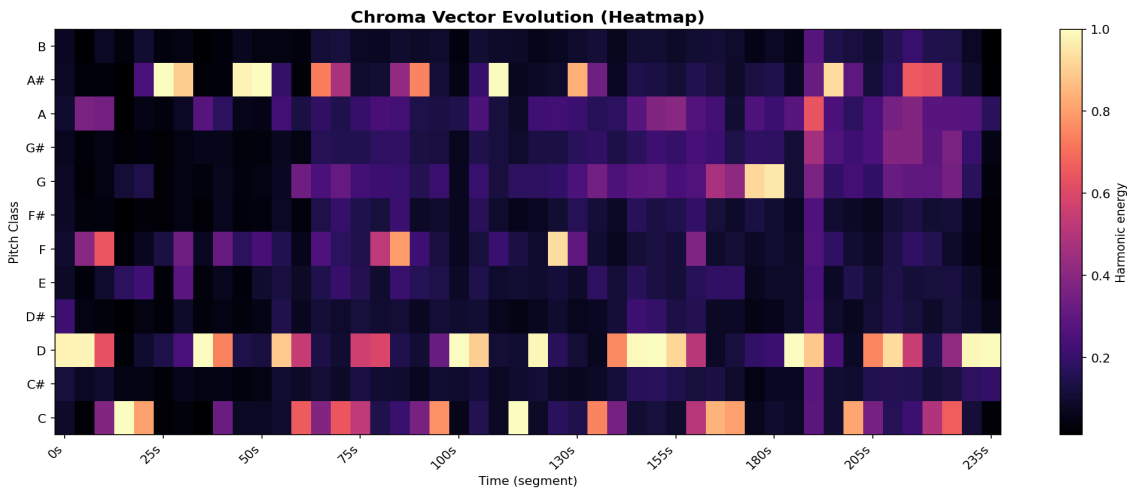
Analysis date: 24 August 2026, 21:27:08, Bucharest, Romania
created at the request of Melodii pentru SYNQ - Pozitron Grup

This document complements the standard certificate with detailed technical parameters (all 13 MFCC coefficients and the full 12-pitch-class chroma vector) that don't fit in a summary table, intended for in-depth technical analysis.

General Information

Duration	243.5 seconds
Sample rate	22050 Hz
Total segments	48
Segment duration	5.0 seconds

Chroma Heatmap



MFCC (Mel Cepstral Coefficients) Table - Mean per Segment

Start	End	MFCC1	MFCC2	MFCC3	MFCC4	MFCC5	MFCC6	MFCC7	MFCC8	MFCC9	MFCC10	MFCC11	MFCC12	MFCC13
0.00	5.00	-579.7	107.2	63.7	25.6	3.1	-6.2	-10.2	-13.6	-15.3	-13.1	-8.8	-6.8	-8.7
5.00	10.00	-449.5	186.4	110.5	41.2	4.4	-6.0	-9.9	-15.8	-19.0	-14.7	-7.5	-5.3	-10.1
10.00	15.00	-486.1	171.8	107.8	46.8	11.5	0.4	-1.4	-3.4	-5.4	-5.0	-3.7	-5.1	-10.4
15.00	20.00	-440.7	179.3	116.1	57.6	23.5	11.1	8.1	7.5	7.7	8.4	7.8	4.4	-1.1
20.00	25.00	-414.7	131.1	96.7	58.9	28.4	11.2	5.6	6.3	8.3	8.9	7.4	4.4	-0.1
25.00	30.00	-404.6	162.1	116.9	68.1	31.8	13.2	7.5	7.3	8.0	8.5	8.7	8.2	6.2
30.00	35.00	-427.1	155.3	102.6	55.3	27.5	13.8	6.4	1.9	1.3	3.8	6.3	6.7	4.9
35.00	40.00	-426.3	174.4	114.1	57.4	24.6	13.5	10.8	8.4	6.3	5.8	4.7	0.4	-5.5
40.00	45.00	-410.2	115.7	88.8	58.1	31.4	13.8	4.9	2.0	2.1	2.6	1.9	-1.0	-5.5
45.00	50.00	-393.1	167.8	114.2	61.9	28.8	15.1	10.9	7.9	5.0	4.4	6.4	8.1	6.7
50.00	55.00	-425.5	180.5	107.2	48.6	19.4	7.9	4.8	3.5	3.3	6.4	12.5	15.7	11.4
55.00	60.00	-352.8	172.8	114.0	56.0	18.2	1.4	-3.1	-2.9	-0.4	4.1	9.1	11.4	10.3
60.00	65.00	-441.6	194.1	105.4	39.7	12.8	3.4	0.0	-0.9	-2.3	-2.0	3.8	9.6	5.5
65.00	70.00	-371.8	157.6	104.1	52.9	21.4	7.7	2.6	-1.9	-4.8	-1.5	7.4	15.2	16.9
70.00	75.00	-355.0	171.6	106.6	48.4	18.8	11.7	11.3	8.1	3.8	4.4	10.2	14.7	12.6
165.00	170.00	-325.2	170.6	87.5	23.4	16.4	6.9	17.7	6.6	-0.1	-3.1	5.3	10.2	5.1
170.00	175.00	-323.4	173.8	82.9	23.7	16.9	-0.9	10.6	3.8	-1.2	-4.2	6.2	16.1	14.1
175.00	180.00	-310.0	185.2	85.7	27.3	24.6	2.5	11.4	6.6	1.8	-5.4	7.8	21.6	18.3
180.00	185.00	-315.8	177.3	77.8	22.8	21.1	-0.9	3.7	2.8	4.6	3.7	18.6	29.7	22.7
185.00	190.00	-321.3	184.8	85.5	20.3	20.4	1.2	8.2	4.8	5.0	-1.4	9.0	17.3	10.6
190.00	195.00	-341.4	167.7	81.3	20.3	9.5	2.1	8.8	6.1	2.9	-1.3	4.4	7.0	1.1
195.00	200.00	-312.8	174.3	71.4	27.8	30.2	10.4	14.8	5.7	-3.8	-4.4	9.2	20.3	17.4
200.00	205.00	-317.4	183.7	75.0	21.8	24.7	3.1	6.8	1.8	0.6	5.0	22.1	27.5	9.4
205.00	210.00	-316.7	187.3	87.1	22.8	18.5	4.3	11.3	3.8	-0.1	-1.9	5.6	13.9	11.9
210.00	215.00	-320.3	173.2	92.0	34.4	23.6	6.1	12.2	5.7	5.1	4.2	7.6	6.9	0.1
215.00	220.00	-323.1	177.9	91.1	28.9	21.3	8.0	11.4	2.4	2.2	5.0	11.8	15.2	9.5
220.00	225.00	-304.0	185.1	68.8	14.0	18.5	2.2	4.5	6.0	12.5	12.2	12.5	14.3	10.2
225.00	230.00	-322.3	175.2	71.0	14.5	13.8	17.4	25.8	20.1	3.5	-11.4	-4.8	16.4	21.4
230.00	235.00	-331.5	169.6	88.7	27.7	20.8	18.3	24.5	12.1	-2.8	-9.5	3.2	20.9	19.4
235.00	240.00	-456.4	161.3	87.5	36.7	20.3	19.5	20.3	15.7	5.4	1.1	11.2	24.7	25.0

Full Chroma Vector Table per Segment

Start	End	C	C#	D	D#	E	F	F#	G	G#	A	A#	B
0.00	5.00	0.09	0.12	0.98	0.21	0.09	0.10	0.08	0.08	0.07	0.10	0.08	0.08
5.00	10.00	0.02	0.08	0.98	0.05	0.03	0.40	0.04	0.02	0.03	0.36	0.03	0.02
10.00	15.00	0.38	0.09	0.63	0.04	0.09	0.64	0.04	0.04	0.05	0.35	0.03	0.08
15.00	20.00	1.00	0.05	0.03	0.02	0.18	0.02	0.01	0.11	0.02	0.01	0.01	0.04
20.00	25.00	0.81	0.05	0.10	0.04	0.22	0.07	0.03	0.14	0.03	0.05	0.24	0.10
25.00	30.00	0.02	0.03	0.14	0.03	0.03	0.13	0.02	0.02	0.02	0.04	1.00	0.04
30.00	35.00	0.04	0.06	0.24	0.09	0.28	0.33	0.05	0.05	0.04	0.08	0.90	0.05

Start	End	C	C#	D	D#	E	F	F#	G	G#	A	A#	B
35.00	40.00	0.01	0.05	1.00	0.04	0.04	0.07	0.02	0.04	0.06	0.27	0.02	0.01
40.00	45.00	0.33	0.05	0.74	0.05	0.07	0.31	0.07	0.07	0.06	0.18	0.03	0.03
45.00	50.00	0.08	0.04	0.14	0.04	0.03	0.18	0.03	0.04	0.04	0.06	0.98	0.07
50.00	55.00	0.08	0.05	0.13	0.05	0.10	0.24	0.04	0.05	0.04	0.06	1.00	0.05
55.00	60.00	0.10	0.10	0.89	0.15	0.13	0.15	0.08	0.08	0.07	0.22	0.20	0.05
60.00	65.00	0.66	0.09	0.54	0.07	0.09	0.06	0.04	0.33	0.05	0.13	0.03	0.04
65.00	70.00	0.38	0.11	0.14	0.11	0.14	0.26	0.14	0.25	0.16	0.19	0.73	0.11
70.00	75.00	0.64	0.09	0.10	0.09	0.20	0.18	0.20	0.31	0.15	0.15	0.48	0.12
165.00	170.00	0.84	0.13	0.08	0.08	0.19	0.09	0.12	0.47	0.22	0.23	0.12	0.11
170.00	175.00	0.81	0.09	0.13	0.08	0.18	0.11	0.09	0.41	0.14	0.11	0.09	0.09
175.00	180.00	0.07	0.05	0.19	0.05	0.07	0.09	0.13	0.92	0.18	0.26	0.13	0.06
180.00	185.00	0.10	0.07	0.21	0.06	0.09	0.10	0.10	0.95	0.18	0.21	0.14	0.08
185.00	190.00	0.08	0.08	1.00	0.09	0.09	0.09	0.08	0.11	0.11	0.28	0.08	0.06
190.00	195.00	0.29	0.28	0.89	0.26	0.25	0.26	0.26	0.36	0.47	0.64	0.32	0.27
195.00	200.00	0.11	0.11	0.25	0.09	0.08	0.18	0.10	0.19	0.26	0.25	0.93	0.14
200.00	205.00	0.82	0.10	0.08	0.07	0.14	0.10	0.08	0.23	0.22	0.17	0.29	0.12
205.00	210.00	0.35	0.15	0.75	0.11	0.11	0.08	0.07	0.19	0.25	0.25	0.12	0.10
210.00	215.00	0.16	0.16	0.93	0.15	0.14	0.14	0.12	0.32	0.38	0.35	0.18	0.16
215.00	220.00	0.22	0.15	0.55	0.12	0.12	0.19	0.14	0.30	0.39	0.38	0.66	0.21
220.00	225.00	0.49	0.12	0.15	0.09	0.12	0.16	0.11	0.29	0.29	0.28	0.64	0.15
225.00	230.00	0.66	0.13	0.42	0.12	0.12	0.09	0.11	0.35	0.37	0.28	0.17	0.14
230.00	235.00	0.11	0.18	0.99	0.10	0.09	0.06	0.06	0.17	0.20	0.27	0.10	0.08
235.00	240.00	0.03	0.19	0.99	0.06	0.04	0.03	0.03	0.04	0.05	0.17	0.02	0.01

Definitions

MFCC (Mel Cepstral Coefficients)

MFCC (Mel-Frequency Cepstral Coefficients) - Standard timbral fingerprint used in MIR (Music Information Retrieval) and speech recognition. Each of the 13 coefficients describes a different aspect of the sound spectrum's shape on a scale adapted to human perception (the Mel scale): MFCC1 generally reflects overall energy, while subsequent coefficients capture increasingly fine spectral detail.

References: Davis, S. & Mermelstein, P. (1980). Comparison of parametric representations for monosyllabic word recognition. IEEE Trans. ASSP.

Chroma Vector

The full chroma vector (12 values, one per pitch class C, C#, D...B) represents the distribution of the piece's harmonic energy across all 12 notes, regardless of octave. High values indicate the dominant notes within a segment; this vector underlies key detection and tonal strength.

References: Peeters, G. (2004). A large set of audio features for sound description. IRCAM.

This analysis was carried out with the help of software built using AI - Claude, DeepSeek, Kimi, Perplexity, Grok, Owen.

Pozitron Grup SRL - all rights reserved

SC Pozitron
Grup SRL