



Music Metadata Influence

TiVo's music metadata *Influence* package offers our music metadata customers another effective way to engage consumers and drive consumption – through song descriptors. Many releases contain tracks that are diverse in tone, energy, complexity and even genre – factors that can be used to fine-tune playlists and other features. With *Influence*, information is available at the track level, enabling even more targeted recommendations, unique playlists and exciting new ways to explore content, such as browsing by unique rhythmic, melodic and harmonic song characteristics. Our music metadata *Influence* package supports multiple platforms and devices, and incorporates the TiVo ID standard media identifier for efficient implementation.

KEY DESCRIPTORS

- Genre
- Tonality/mode
- Harmonic stability
- Rhythmic intensity
- Performance energy
- Dynamic range
- Loudness
- Textural stability
- Tempo
- Complexity
- Density
- Melodic presence

BENEFITS BY AUDIENCE

Retailers and Entertainment Portals:

- Drive consumption through high-quality playlists and recommendations.
- Enhance navigation by categorizing music in new ways.
- Enable a wide array of external and internal use cases with unique song descriptors and browsing capabilities.

Consumers:

- Grow music collections through interesting and relevant recommendations.
- Find new music by browsing song characteristics.
- Build playlists based on favorite songs and song features.

TRACK ATTRIBUTES

Core Musical Features

Genre	TiVo's musical genre attributes assigned at the track level		
Tempo Primary	Indicates the pace of the music with a precise measurement of beats per minute; if a song has extreme fluctuation in perceived tempo or if no regular pulse exists, a BPM value of 0 will be reported	Fast tempo <i>Run Devil Run</i> , Paul McCartney	Slow tempo <i>Love Is on the Way</i> , Celine Dion
Tempo Secondary	Indicates existence of double-time or half-time pace to the music, to determine the tempo that most closely correlates with general listener interpretation	Fast tempo <i>Smile</i> , Pearl Jam	Slow tempo <i>I Left My Heart in San Francisco</i> , Tony Bennett
Tempo Confidence	Indicates the likelihood of interpretative accuracy; most relevant when multiple tempo candidates are discovered	High confidence in tempo value <i>Hot Mama</i> , Trace Adkins	
Rhythmic Complexity	Identifies the rhythmic patterns that most uniquely define a particular piece of music; provides insight into the perceived intricacy or simplicity of those patterns	High rhythmic complexity <i>Mary's Song (Oh My My My)</i> , Taylor Swift	Low rhythmic complexity <i>Fly In</i> , Lil Wayne
Density	Describes the continuity of sound over time as measured over multiple frequency bands; averaged over each beat throughout the entire track; quantifies the "thickness" or "thinness" of the musical sound	High density <i>2,000 Light Years Away</i> , Green Day	Low density <i>The Jezebel Spirit</i> , David Byrne & Brian Eno
Melodic Complexity	Extracts melodic components and identifies their primary tendencies, measuring how a melody behaves (e.g., "Does it behave naturally or is it full of surprises?")	High melodic complexity <i>Stay Together</i> , Jennifer Lopez	Low melodic complexity <i>Country Road</i> , Jack Johnson
Harmonic Complexity	Provides a measurement of how common or novel harmony is with regard to principles of music cognition, identifying the most characteristic harmonic progressions in the music	High harmonic complexity <i>Bouncing with Bud</i> , Chick Corea	Low harmonic complexity <i>Southern Girls</i> , Cheap Trick
Melodic Presence	Presence or absence of a tune performed by a lead voice (vocal or instrumental); quantifies the amount of melodic lead present in the musical foreground (Lower value indicates vocals buried in the mix.)	High melodic presence <i>One Man</i> , Tank	Low melodic presence <i>Infinite in All Directions</i> , John Foxx

Mood-Based Elements

Tonality/ Mode	Categorizes each harmony in a piece of music according to its mode (major, minor, etc.) and amount of dissonance present, providing an account of the brightness or darkness of the mood created by the harmonies in a work	Very dark <i>Spirits Drifting</i> , Brian Eno	Very bright <i>Speeding Time</i> , Carole King
Harmonic Stability	Indicates stability or repetition of harmonic content; stable or repetitive patterns create a sense of familiarity and comfort; shifting harmonic patterns challenge the listener	High harmonic stability <i>Sofi Needs a Ladder</i> , Deadmau5	Low harmonic stability <i>Ac-Cent-Tchu-Ate the Positive</i> , Dr. John
Rhythmic Intensity	Extracts a rhythmic power profile describing the music's rhythmic elements and providing an indicator of "danceability" (e.g., "Is the music dominated by hard-hitting beats or are the sounds smooth and connected?")	High rhythmic intensity <i>Don't Stop the Party</i> , The Black Eyed Peas	Low rhythmic intensity <i>It Had to Be You</i> , Liza Minnelli
Performance Energy	A combination of musical and sonic elements that creates a perceived amount of excitement or energy in a musical performance; an indicator of mood as related to the energy of individual instruments/performers	High performance energy <i>Twist</i> , Korn	Low performance energy <i>The End</i> , Ringo Starr

Sound and Texture Features

Dynamic Range	Measurement in decibels quantifying the amount of dynamic fluctuation over the course of a piece of music; value varies according to musical style, performance, and how the recording techniques are captured	High dynamic range <i>Watching the Planets</i> , The Flaming Lips	Low dynamic range <i>Won't Go Home Without You</i> , Maroon 5
Loudness	Measures average audio power throughout the piece as perceived by the typical listener; perception of loudness change as a function of the physical strength (amplitude), frequency and duration of the audio signal	High loudness <i>Spin the Black Circle</i> , Pearl Jam	Low loudness <i>Tom's Diner</i> , Suzanne Vega
Textural Stability	Frequency and degree of large-scale textural changes; pronounced changes in texture (timbre) contribute significantly to defining musical form	High textural stability <i>Jealousy</i> , Liz Phair	Low textural stability <i>The Needle and the Damage Done</i> , Neil Young