G10H

ELECTROPHONIC MUSICAL INSTRUMENTS; INSTRUMENTS IN WHICH THE TONES ARE GENERATED BY ELECTROMECHANICAL MEANS OR ELECTRONIC GENERATORS, OR IN WHICH THE TONES ARE SYNTHESISED FROM A DATA STORE

Definition statement

This place covers:

- Artistic processing of music, i.e. musical processing involving alterations in harmony, timbre, texture, melody, rhythm or expressivity
- Assisted or automated music creation, synchronisation or interpretation, e.g. automatic composing, interactive music displays, karaoke, instrument karaoke, musical accompaniment, musical aspects of videogames
- Music analysis or synthesis
- electrophonic musical instruments, mechanical details, components or accessories for use in electrophonic musical instruments
- Input/output devices therefor, e.g. electric guitar transducers, synthesiser keyboards
- Control, communications or data organization therefor, e.g. effect pedals for guitars, internet jamming protocols, MIDI, wavetables, rhythm or harmony metadata.

Relationships with other classification places

G10L Speech analysis or synthesis; speech recognition; speech or voice processing; speech or audio coding or decoding should systematically be considered as a function place for voice processing or audio coding applications, G10H being an application place for voice processing or audio coding with a musical application, e.g. melodic or rhythmic analysis of a singing voice, electrophonic musical instrument control, special encoding of audio sounds for synthesiser wavetables.

The classification of voice processing as speech processing G10L or electrophonic musical instruments G10H is therefore highly dependent on the primary vocal intent of the signal to be processed, i.e. communication of meaning, a.k.a. speech (G10L) or musical, e.g. singing.

If the primary vocal intent is musical, e.g. singing, then the nature, musical or not, of the voice processing, i.e. the result to be achieved, determines whether a G10H classification is appropriate.

Examples:

- Recognition of sung words, i.e. meaning extraction: consider G10L 15/00 speech recognition
- Musical melodic transcription (or transposition) of the sung words, e.g. to a musical score by extraction of note pitches or musical rhythm information: consider G10H .

Musical voice processing must be systematically classified in G10H, but G10L should be considered for the vocal processing aspects of musical voice processing.

Musical games, musical rhythm games such as dance games, musical aspects of videogames e.g. game background music changes, synchronisation between image and musical events, must systematically receive a classification of their musical aspects in G10H. A63F 13/00 should be considered for the gaming aspects of such games.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Game rules or game display appearance	A63F

Audio or sound effects for videogames	A63F 13/00
Pitch and rhythm extraction in videogames, substantially similar to G10H 2210/066 ("for pitch analysis"), G10H 2210/076 ("tempo analysis"), G10H 2210/091 ("performance evaluation") with G10H 2220/135 ("games"), also related to G10H 1/366 voice modification	A63F 2300/6072
Music games	A63F 2300/8047
Metronomes	G04F 5/02
Electrical digital data processing	G06F
Digital computing or data processing equipment or methods, specially adapted for information retrieval of audio data	G06F 16/60
Security arrangements for protecting computers or computer systems against unauthorised activity	G06F 21/00
Teaching music per se	G09B 15/00
Acoustic, i.e. non-electronic, musical instruments	G10B- G10F
Keyboard improvements also suitable for acoustic pianos, e.g. counterweights; mechanical details of electronic piano keyboards also mechanically driving hammers	G10C 3/12
Stringed musical instruments; wind-actuated musical instruments; accordions or concertinas; percussion musical instruments; musical instruments not otherwise provided for e.g. mechanical details or accessories of electronic musical instruments, corresponding to a suitable acoustic instrument type, e.g. whammy bar for electric guitars, bodies of electric guitars,	G10D
Aids for music; Supports for musical instruments; Other auxiliary devices or accessories for music or musical instruments	G10G
Sound producing devices	G10K
Speech analysis or synthesis; speech recognition; speech or voice processing; speech or audio coding or decoding	G10L
Speech or audio signal analysis-synthesis techniques for redundancy reduction in general, e.g. in vocoders ; Coding or decoding of speech or audio signals in general, using source filter models or psychoacoustic analysis	G10L 19/00
Information storage based on relative movement between record carrier and transducer	G11B
Signal processing not specific to the method of recording or reproducing; Circuits therefore	G11B 20/00
Music playlists, music indexing	G11B 27/00
Basic electronic circuitry	H03
Amplifiers	H03F
Gain control in amplifiers or frequency changers	H03G 3/00
Tone controls or bandwidth control in amplifiers	H03G 5/00
Arrangements for broadcast applications with a direct linking to broadcast information or broadcast space-time; Broadcast-related systems, e.g. sound mixing	H04H 60/04
Details of transducers, loudspeaker or microphones	H04R 1/00
Stereophonic systems, e.g. 3D sound field processing	H04S

Special rules of classification

Classification of invention information and additional information is obligatory,

Classifying additional information is obligatory even if the main invention does not belong to this subclass.

Indexing Code symbols of the type
G10H 2210/00 - G10H 2210/626 - G10H 2250/00 - G10H 2250/645 represent information mostly orthogonal to ECLA groups and should be systematically used to classify information relevant to the main described concepts and ideas, although it need not be invention information. The number of Indexing Code symbols assigned to a document is not limited.

It is considered acceptable to allocate three or four ECLA classes to a particular document if needed.

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Musical instrument	"tool", "device" , "process" or "protocol" for performing some musical task involving electrophonic signals, e.g. musical parameters
Music	A n art form whose medium is sound and silence. Its common elements are pitch (which governs melody and harmony), rhythm (and its associated concepts tempo, meter, and articulation), dynamics, and the sonic qualities of timbre and texture.Music (including singing, the vocalized form of music) is distinguished from speech by its particular and deliberate emphasis on the above common elements, especially rhythm and melody.By contrast, speech is distinguished from music by its particular and deliberate emphasis on conveying meaning: Speech is the vocalized form of human communication
Musical	Generally employed in a restrictive limiting sense with respect to speech, general audio and sound, i.e. implying an intentional and artistic main focus at least by the performer on at least one of harmony, melody, rhythm, timbre, or expressivity. Even though one person's music may be noise to another, music is a performing art, and musical character is defined by the mere artistic intent of the performer
Musical content	Set of musical parameters.
Musical parameters	Constituent element of "musical content" as defined above. Musical parameters include e.g. pitch, rhythm, timbre, texture, expressivity or dynamics.
MIDI	MIDI stands for Musical Instrument Digital Interface and refers to a note oriented music file and transmission format. Many variations and improvements of this note oriented format exist. The use of the acronym MIDI should be broadly interpreted as also referring to any note oriented format for transmission or recording.

Performance	has three meanings in this field : -in a first meaning, it is an event in which a performer or group of (typically human) performers behave in a particular way (e.g. in their manner of singing or performing music) for another group of people. -in a second meaning it refers to a metric quantifying how well an entity (human, device, or process) deals with a specific aspect of a specific (not necessarily musical, e.g. mflops for a DSP processor in a synthesiser) task- in a third, narrower meaning, it is meant as the strict intersection of the above two meanings, i.e. quantifying the closeness of a performer's performance to a predetermined musical or singing reference i
Karaoke	(translation from the Japanese: "empty orchestra"; synonyms: KTV, Noraebang) Karaoke refers to singing into a microphone by amateur performers along e.g. recorded music or a music video, often with a lyrics display or with performance evaluation
Instrument karaoke	Playing a predetermined melody on a musical instrument or a musical instrument interface, often with score following along with recorded or synthesised accompaniment, often with means for evaluating or scoring the quality of the performance
Rhythm	Regular recurrence or pattern in time, associated concepts: meter, tempo, articulation and beat:
Expressivity	Musical properties which cannot be properly described by notions of harmony, rhythm, pitch, timbre or texture, and which are linked to a particular manner of execution of a musical piece, e.g. indications of mood, e.g. "dolce", or to corresponding note execution parameters such as vibrato or legato, some of which can be coded in communications protocols such as MIDI e.g. expressivity controller.
Polyphony	Ability of a synthesiser to simultaneously generate a limited number of unrelated melodic lines, Polyphony is conventionally quantified as the number of available "voices": a sound-generating device with six voices may be described as being, for example, six-voice polyphonicEach melodic line or simultaneous note requires one resource entity (for example a block of electronic hardware or a time-slot in a Digital Signal Processor program) capable of generating a single tone, and this is what is known as one "voice"
Voice	Has several important meanings in this field :- Resource entity (hardware, time slot) needed to generate a single tone or a single melodic line, in the context of polyphony. The term is generic, and is not meant to imply that the line should necessarily be vocal in character, instead referring to instrumentation or simply to register.This field-specific meaning of "voice" is relevant for G10H 1/18 selecting circuits; it is further defined in the definition of "polyphony" and in that of "part" - Sounds generated by vocal chords (e.g. human vocal folds) or synthetic versions thereof, e.g.: - as the medium of speech to communicate meaning; - for artistic musical purposes, e.g. with greater emphasis on melody or rhythm, as in singing, chorus, descant; or - for instrument control purposes (e.g. G10H 5/005 voice controlled instruments)
Speech	Definite vocal sounds that form words to express thoughts and ideas

Part	In addition to the usual meaning, a piece of a whole, a part has three more preci se meanings in a musical sense:- A part is a strand or melody of music played by an individual instrument or voice (or group of identical instruments or voices) within a larger work. In the context of polyphonic composition the term voice may be used instead of part to denote a single melodic line or textural layer. This field-specific meaning is very commonly used in connection with MIDI - A part also refers to the separate printed or manuscript copies of the music for each individual instrument in an ensemble or orchestra, as distinct from the score, which holds the music for all the instruments.- A part in great Highland Bagpipe music is a musical strain or sentence. Usually each part consists of four phrases, either one or two bars long. Several sentences combine to produce a paragraph or complete work or tune.
Audio signal	An audio signal is a representation of sound, usually electrical, in analog, digital or coded form, without restriction as to the category of sound being represented, e.g. speech, music, noise, The category of sound being represented, e.g. speech, music or noise, is primarily defined with respect to the features of the audio signal and with respect to the main intent of the source or performer. This category, as defined in this glossary, is very relevant for proper classification

G10H 1/00

Details of electrophonic musical instruments

Definition statement

This place covers:

Details of electrophonic musical instruments, electrophonic musical tools, electrophonic musical data or electrophonic musical processing.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Instruments in which the tones are generated by electromechanical means	G10H 3/00
Instruments in which the tones are generated by means of electronic generators	G10H 5/00
Voice controlled electrophonic musical instruments	G10H 5/005
Real-time simulation of G10B, G10C, G10D-type instruments using recursive or non-linear techniques, e.g. waveguide networks, recursive algorithms	G10H 5/007
Electrophonic musical instrument processor architecture	G10H 7/002
Sample based waveform production processes from data store samples in electrophonic musical instruments	G10H 7/02
Functions based waveform production processes with parameters stored in data store in electrophonic musical instruments	G10H 7/08
Details or accessories of organs, harmoniums or similar wind instruments	G10B 3/00

Details or accessories of pianos, harpsichords, spinets or similar stringed musical instruments with one or more keyboards	G10C 3/00
Arrangements for producing a reverberation or echo sound	G10K 15/08

Special rules of classification

Documents dealing with details of musical instruments and which do not contain features corresponding to a subgroup of G10H 1/00 shall be classified in G10H 1/00 and appropriate Indexing Code G10H 2210/00 - G10H 2250/645.

Synonyms and Keywords

In patent documents, the following abbreviations are often used:

ADSR	Attack Decay Sustain Release, an approach to note synthesis and note envelope control
IR	Impulse response or Infrared, depending on context
FIR	Finite impulse response
IIR	Infinite impulse response
Spint	Special Instrument, instrument with unusual features
PCM	pulse code modulation
WAV	Waveform audio file format
ADPCM	Adaptive Differential Pulse Code Modulation
CELP	Code excited linear prediction, used for audio coding
MP3, AC3, ATRAC	various audio compression formats
RFID	radio frequency identification
LFO	low frequency oscillator
VCF	Voltage controlled filter (see G10H 5/002)
CRC	Cyclical redundancy check
LZT	lead zirconate (piezoelectric sensors)
PDA	personal digital assistant, tablet computer
GSM	time division multiplexed mobile telephony standard
3D	three dimensional
DFT	discrete fourier transform
DCT	discrete cosine transform
FFT	fast fourier transform
IFFT	inverse fast fourier transform
Mplay	multiplayer
Velocity	volume of a note

G10H 1/0008

{Associated control or indicating means}

Definition statement

This place covers:

Producing, processing or displaying musical information, status information or musical parameters, e.g. for information of the user or as control parameters, e.g. for controlling electrophonic musical instruments, indexing or retrieving musical data from musical databases.

Musical analysis of audio or music signals; extraction of musical parameters.

User interfaces for musicians, such as specialised displays.

Control of electrophonic musical instruments: This group is appropriate for classifying control details which are not otherwise provided for in all other groups in G10H 1/00.

Music databases relying on musical parameters which are the result of musical analysis, relate to composing or synthesis, e.g. wavetables or sound banks, include note oriented data, or are otherwise specifically meant for use by a device classified in electrophonic musical instruments.

Relationships with other classification places

Audio data information retrieval, indexing or data structures relating to audio waveform synthesis should be classified in G10H 7/02 - G10H 7/12, e.g. audio sample libraries such as synthesiser wavetables, G10H 7/02.

General purpose audio data information retrieval using content features or bibliographical data associated with the audio data, e.g. libraries of PCM or MP3 audio files not indexed with musical parameters, and not used for composition or synthesis: G06F 16/60.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Musical transmission parameters, protocols, transmission or storage formats or encoding for transmission or storage	G10H 1/0033
Information retrieval of audio data	G06F 16/60
Teaching of music per se	G09B 15/00
Means for the representation of music	G10G 1/00
Chord or note indicators, fixed or adjustable, for keyboard of fingerboards	G10G 1/02

Special rules of classification

Audio data information retrieval, indexing or data structures should be classified in G10H 1/0008 (if the invention is the index, index extraction or data structure) or G10H 1/0041 (if the nature of the stored musical data or associated metadata is important, e.g. different piano note samples at different playing loudnesses for a piano synthesiser) whenever they rely on musical parameters such as pitch, dynamics, harmony , timbre, texture, melody, rhythm or expressivity.

Audio data information retrieval, indexing or data structures relating to composing, e.g. musical collage, medley, should be classified in G10H 1/0025, along with musical rule bases, and databases of music fragments suitable for composing, organised according to a certain composing logic.

Libraries relating only to specific electrophonic musical instruments such as synthesisers, libraries generated or organized or managed by a music sampler, or libraries specifically organised or indexed to facilitate musical composing G10H 2210/101 ("composing"), G10H 2240/121 ("library").

G10H 1/0033

{Recording/reproducing or transmission of music for electrophonic musical instruments}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Recording/reproducing of accompaniment for use with an external source, e.g. karaoke systems	G10H 1/361
Recording or reproducing of audio signals using Pulse Code Modulation [PCM]	G11B 20/10527

G10H 1/0041

{in coded form}

Definition statement

This place covers:

Musical content recording, reproducing or storage or corresponding data formats or data structures, in coded form e.g. PCM, MP3, ADPCM; also corresponding metadata contents in cases the metadata includes musical parameters (transmission of musical contents G10H 1/0058, wireless transmission G10H 1/0083).

Musical data structures used for recording, e.g. in musical libraries such as wavetables or song fragments indexed with musical parameters such as tempo, chord, genre, for remix composing applications.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Instruments in which the tones are digitally synthesised from a data store using a common processing for different operations or calculations and a programme to control the sequence thereof	G10H 7/002

Special rules of classification

The indication of additional groups in G10H 2240/121 for further definition of the musical library or G10H 2240/075 metadata should be given if appropriate. Also an indication of intended processes in G10H 2210/00 or G10H 2250/00, if applicable, should be given.

G10H 1/0058

{Transmission between separate instruments or between individual components of a musical system (G10H 1/0083 takes precedence)}

Definition statement

This place covers:

Modes of transmission or transmission protocols, e.g. MIDI to or from an electrophonic musical instrument.

Any transmission, also when it is not music per se, even if it only represents control data or transmission of network information for electrophonic musical instruments: e.g. latency data transmission for music jamming over the internet (see also G10H 2240/175 ("transmission jams")), G10H 2240/281 transmission protocols specially used for musical instruments.

References

Limiting references

This place does not cover:

Transmission between separate instruments or between individual components of a musical system using wireless transmission, e.g. radio, light, infrared	G10H 1/0083

G10H 1/0083

{using wireless transmission, e.g. radio, light, infrared}

Special rules of classification

Whenever a wireless aspect is important for an electrophonic musical instrument, then it should be coded here (ignore the hierarchy), regardless of whether music or other control data is transmitted.

G10H 1/0091

{Means for obtaining special acoustic effects (combined with modulation G10H 1/043)}

Definition statement

This place covers:

Musical effects not otherwise provided for, e.g. DJ scratch effects.

References

Limiting references

This place does not cover:

Means for controlling the tone frequencies, e.g. attack, decay; Means for producing special musical effects, e.g. vibrato, glissando	G10H 1/02
Means for controlling the tone frequencies by additional continuous modulation	G10H 1/043
Circuits for establishing the harmonic content of tones, by combining tones, for obtaining chorus, celeste or ensemble effects	G10H 1/10

Means for processing the signal picked up from the strings, for distorting the signal, e.g. to simulate tube amplifiers	G10H 3/187
Aspects of games using an electronically generated display having two or more dimensions, e.g. 3D sound effects in virtual videogame spaces	A63F 13/00
Arrangements for producing a reverberation or echo sound	G10K 15/08

Informative references

Attention is drawn to the following places, which may be of interest for search:

Accompaniment arrangements: Chord	G10H 1/38
Editing; Indexing; Addressing; Timing or synchronising; Monitoring; Measuring tape travel: reproducing continuously a part of the information, i.e. repeating	G11B 27/005
Stereophonic Systems, e.g. Electronic adaptation of multi-channel audio signals to reverberation of the listening space	H04S 7/305

Special rules of classification

Classification G10H 1/0091 should also be assigned whenever details of turntable-like DJ interfaces covered by G11B 27/005 go beyond mere mechanical details of the turntable and include details about the generation of audio control signals, e.g. MIDI, or real-time audio signal processing details specifically for providing the DJ scratch effect.

Indexing Codes of the Indexing Code main group G10H 2210/155 ("effect") shall be assigned to define effect types.

G10H 1/02

Means for controlling the tone frequencies, e.g. attack or decay; Means for producing special musical effects, e.g. vibratos or glissandos

Definition statement

This place covers:

The time dependent control of:

- Amplitude modulation of musical signal in general, e.g. envelope, dynamics, ADSR,
- Pitch modulation of a musical signal in general, e.g. glissando, vibrato.

The control of tone colour modulation of musical signal (e.g. spectral contents, timbre variation, filtering).

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Instruments using voltage controlled oscillators and amplifiers or voltage controlled oscillators and filters	G10H 5/002

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

ADSR	denotes a form of envelope used for synthesizing a tone which is split into four time segments: Attack, Decay, Sustain, Release. An ADSR envelope is defined by an attack time, decay time, sustain level and release time
Attack time	is the time taken for initial run-up of level from nil to peak, beginning when the key is first pressed
Decay time	is the time taken for the subsequent run down from the attack level to the designated sustain level
Sustain level	is the level during the main sequence of the sound's duration, until the key is released
Release time	is the time taken for the level to decay from the sustain level to zero after the key is released

G10H 1/047

by acousto-mechanical means, e.g. rotating speakers or sound deflectors

Definition statement

This place covers:

Continuous modulation by acousto-mechanical means.

Electronic or computer simulations of the effect of such acousto-mechanical means, e.g. Leslie effect.

G10H 1/055

by switches with variable impedance elements

Definition statement

This place covers:

Electric or mechanical switches or analogue control elements with variable impedance for controlling electrophonic musical instruments or computer music interfaces.

Analogue variable impedance elements, e.g. strain gauge, potentiometer, variable inductor, as used in electrophonic musical instruments, regardless of its control effects.

Indexing Codes G10H 2220/275 (input key switch) and G10H 2220/561 (transducer resistor) represent additional aspects which should be considered for finer classification.

G10H 1/06

Circuits for establishing the harmonic content of tones {, or other arrangements for changing the tone colour}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Time-dependent modulation of amplitude or pitch parameters	G10H 1/04

G10H 1/08

by combining tones (G10H 1/14, G10H 1/16 take precedence; chord G10H 1/38)

References

Limiting references

This place does not cover:

Circuits for establishing the harmonic content of tones during execution	G10H 1/14
Circuits for establishing the harmonic content of tones by non-linear elements	G10H 1/16
Chord	G10H 1/38

Informative references

Attention is drawn to the following places, which may be of interest for search:

Speech analysis or synthesis	G10L

G10H 1/125

{using a digital filter}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Digital filters per se	H03H 17/02

G10H 1/14

during execution {(voice controlled instruments G10H 5/005)}

References

Limiting references

This place does not cover:

Voice controlled instruments	G10H 5/005

Informative references

Attention is drawn to the following places, which may be of interest for search:

Modulation during execution	G10H 1/053

G10H 1/16

by non-linear elements (G10H 1/14 takes precedence)

References

Limiting references

This place does not cover:

Circuits for establising the harmonic content of tones during execution	G10H 1/14

Informative references

Attention is drawn to the following places, which may be of interest for search:

Generation of non-sinusoidal basic tones	G10H 5/10

Special rules of classification

If the nonlinear element e.g. semiconductor such as JFET or diode, is used for voluntary distortion of existing audio waveforms for musical purposes, then G10H 3/187 should be assigned as well, irrespective of whether it is used with a string instrument or not.

G10H 1/22

for suppressing tones; Preference networks

Definition statement

This place covers:

Selecting which notes or voices to suppress from polyphonic music, e.g. to alleviate the effects of insufficient hardware capabilities or to save processing power.

Also covers deliberately simplifying polyphony or melody, suppressing notes for correcting errors in music signal transmission (e.g. frozen notes due to a missing note-off command).

Special rules of classification

When applicable, also classify in Indexing Code group G10H 2230/041 if processor load is important, for mobile telephones see Indexing Code group G10H 2230/021 for mobile ringtones.

G10H 1/24

for selecting plural preset register stops

Definition statement

This place covers:

Details specifically dealing with relevant aspects of selection of different tone colours or instrument voices, e.g. piano, violin, trumpet.

G10H 1/26

for automatically producing a series of tones

Definition statement

This place covers:

Automatically producing a predetermined and unchangeable sequence of musical tones upon initial triggering, specifically dealing with musical parameters.

Circuits for musical cards or the like, algorithmically producing a pre-programmed, unchangeable melody, e.g. from a coded sequence of tones in a ROM.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Musical or noise- producing devices for additional toy effects other than acoustical	A63H 5/00

G10H 1/32

Constructional details

Definition statement

This place covers:

Mechanical details of electrophonic musical instruments, where such mechanical details are not otherwise provided for.

This includes for example:

- Details of the body, frame, casing, electronic keyboard cover lid,
- Ergonomic details such as shape of its body, position of its connectors,
- Portability aspects, shoulder straps,
- Power supply arrangements,
- Unusual details of the appearance of the electrophonic instrument.

Special rules of classification

Indexing Codes under G10H 2230/00 provide additional subdivisions for indexing features of constructional details.

Indexing Code symbol under G10H 2230/045 relating to "spint" (special instrument) shall be used for classifying electrophonic instruments according to their similarity to, or improvement to, a specific conventional acoustic instrument type, shape, usage, characteristic feature, sound signature or overall character in combination with G10H 1/32 if mechanical constructional details are involved and if a suitable special instrument category is listed as Indexing Code.

G10H 1/34

Switch arrangements, e.g. keyboards or mechanical switches specially adapted for electrophonic musical instruments

Definition statement

This place covers:

Constructional details at keyboard level or key level, mechanisms linked to individual keys or keyboards.

Key-like user input controls for electrophonic musical instruments, e.g. pedals, touchscreen active zones, not only including mechanical switches with contacts, but also switches in a generalised sense, e.g. light barriers, even with continuously varying output.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Controlling tone frequencies by continuous modulation by switches with variable impedance elements	G10H 1/055
Keyboards applicable to acoustic instruments	G10B, G10C

Special rules of classification

G10H 1/34 should be used when the arrangement of multiple keys with respect to one another is ergonomically or musically important (whole keyboard features).

G10H 1/344, G10H 1/346 or G10H 1/348 should be restricted to constructional details at key level, e.g. mechanisms linked to individual keys, whole keyboard arrangements should be classified in G10H 1/34 or G10H 1/342.

Indexing Codes provide additional subdivision: see G10H 2220/265 ("input key"), G10H 2220/221 ("input keyboard"); for continuous keyboards see G10H 2210/401 ("scale microtonal").

Processing information on key actuation: see key multiplexing G10H 1/182.

G10H 1/348

{Switches actuated by parts of the body other than fingers}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Pedals or pedal mechanisms for wind-actuated organs	G10B 3/14
Pedals or pedal mechanisms for pianos	G10C 3/26

G10H 1/36

Accompaniment arrangements

Definition statement

This place covers:

Accompaniment systems, e.g. karaoke.

G10H 1/361 also includes instrument karaoke, in which the performer does not sing to recorded music but is expected to play a specific melody on an instrument in synchrony with recorded music.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Teaching of music per se	G09B 15/00.

Special rules of classification

Whenever accompaniment systems unrelated to karaoke are allocated in G10H 1/361 or subgroups thereof, Indexing Code G10H 2210/005 ("accompaniment") should be assigned if applicable.

karaoke systems per se should be classified in G10H 1/361 and subgroups, but not in G10H 1/36.

The JPO classifies karaoke in FI and IPC G10K 15/04, with a detailed cross-indexing in FT 5D108. Search in those fields is necessary for any complete search involving karaoke.

G10H 1/363

{using optical disks, e.g. CD, CD-ROM, to store accompaniment information in digital form}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Recording or reproducing by optical means	G11B 7/00

G10H 1/368

{displaying animated or moving pictures synchronized with the music or audio part}

Definition statement

This place covers:

Features specific to synchronisation of musical parameters to moving images, musical accompaniment of slide shows, background music dependence on videogame environment or videogame character actions.

Features specific to karaoke synchronized with animated pictures (karaoke lyrics G10H 1/0008, G10H 2220/011 display lyrics).

Musical games where user actions on musical parameters are expected to be synchronized to music and video, e.g. rhythmic hopscotch type games such as Dance Revolution.

Generation of artistic images related to music parameters (informative musical displays G10H 1/0008).

G10H 1/40

Rhythm

Definition statement

This place covers:

Analysis of rhythmic information such as tempo, timing, e.g. of onsets, beat.

Processing of rhythmic information for processing music, such as selecting music from a database, music composition.

Generation of rhythmic information for use in electrophonic musical instruments: e.g. timing control, timing processing, timing classification, timing synchronisation, timing encoding of musical data, synthesis of rhythmic information.

Display of rhythmic information in music such as tempo, timing, beat, onsets.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Synchronisation of music with video	G10H 1/368
Training appliances or apparatus for special sports: for running, jogging or speed-walking	A63B 69/0028
Metronomes	G04F 5/02
Modification of at least one characteristic of speech waves: time compression or expansion	G10L 21/04

Special rules of classification

Beat or rhythm synchronisation of two successive pieces, e.g. in remix, also consider G10H 7/008 in addition to G10H 1/40.

For rhythms selected according to exercising or body rhythms, also consider A63B 69/00 in addition to G10H 1/40.

For databases with tempo or rhythm indexing, please consider a dual classification in G06F 16/60 and G10H 1/0041 in addition to G10H 1/40.

G10H 1/46

Volume control

Definition statement

This place covers:

Volume control specifically provided in electrophonic musical instruments: e.g. MIDI volume control, MIDI velocity controller, volume control for electric guitars, for musical keyboards.

G10H 3/00

Instruments in which the tones are generated by electromechanical means

Definition statement

This place covers:

Instruments in which a mechanically moving part is caused to move at the frequency of the generated note, and in which this movement is sensed by a movement sensor other than a microphone.

Details of movement transducers therefor, e.g. magnetic guitar pick-up;

Instrument-specific adaptations for contact microphones.

Audio signal processing specially adapted for further musical processing of signals from said transducers or for musical parameter extraction.

Percussion synthesis or drumpad triggers, even if the mechanically moving part is non-resonant, i.e. does not have a frequency of oscillation, see in particular G10H 3/146.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Loudspeaker enclosure specifically adapted to a musical instrument and interacting with musically, structurally or ergonomically relevant parts of the musical instrument	G10H 1/32
Acoustic musical instruments equipped with microphones or microphone, e.g. microphone positioning on specific acoustic instruments; musical instruments	G10C - G10F
Microphones or loudspeakers	H04R
Loudspeaker enclosures	H04R 1/02, H04R 1/28
Special adaptations for use as contact microphones, e.g. on musical instrument, on stethoscope	H04R 1/46

G10H 3/125

{Extracting or recognising the pitch or fundamental frequency of the picked up signal}

Definition statement

This place covers:

Any pitch analysis for musical parameter extraction of an audio signal not specifically using a mechanical resonant generator.

This includes: note extraction, score transcription, performance evaluation e.g. of karaoke singing, pitch processing for query by humming.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Pitch determination of speech signals in general	G10L 25/90

Special rules of classification within this group

Relevant Indexing Codes under G10H 2210/031 ("analysis") must be assigned.

Additional classification under G10H 1/40, e.g. associated beat or note onset timing analysis or G10H 1/0008, e.g. other types of musical analysis is frequent.

Database retrieval based on pitch queries, classified both in G10H (e.g. G10H 3/12, G10H 1/0008, G10H 1/0041 if the emphasis is on the pitch analysis algorithm, the type of indexing, or the data structure or metadata organisation of the musical parameters derived from pitch analysis) and G06F 16/60.

G10H 3/143

{characterised by the use of a piezoelectric or magneto-strictive transducer}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Piezoelectric or magnetostrictive loudspeakers for mechanical vibrations	B06B, G10K
Piezoelectric or magnetostrictive transducers or microphones	H04R 15/00, H04R 17/00

G10H 3/146

{using a membrane, e.g. a drum; Pick-up means for vibrating surfaces, e.g. housing of an instrument}

Definition statement

This place covers:

Electronic drums (see also Indexing Code G10H 2230/275 ("spint drums"));

Vibration sensors sensing the vibrations of instrument bodies, also of guitars or other stringed instruments.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Guitars used as percussion instruments	G10H 2230/141

Special rules of classification

This group is also appropriate for classifying anything related to percussion synthesis, even if not using a membrane or a vibrating surface, e.g. optically triggered drum sounds drum triggers, non-resonant drumpads, sensors therefor.

It is essential in this group to assign enough classification symbols to be able to quickly retrieve the specific type of percussion, e.g. a hihat pedal typically would be coded here, in G10H 1/348, and in the Indexing Code G10H 2250/435 ("Gensound percussion") and especially in the relevant subdivisions of Indexing Code G10H 2230/251 ("Spint percussion"), e.g. G10H 2230/331 ("Spint cymbal hihat").

G10H 5/00

Instruments in which the tones are generated by means of electronic generators (G10H 7/00 takes precedence)

Definition statement

This place covers:

Generation of musical tones by analogue electronic circuits.

Voice controlled instruments, even if the voice processing is performed by computer, and even if the output tone is synthesised from a data store.

Physical modelling of acoustic instruments, e.g. implemented by appropriate software.

Simulation of analogue circuits using digital means.

References

Limiting references

This place does not cover:

Instruments in which the tones are synthesised from a data store, e.g. computer organs	G10H 7/00

G10H 5/005

{Voice controlled instruments}

Definition statement

This place covers:

Electrophonic musical instruments in which the output sound is controlled by processing the human voice or glottal signals of the performer in order to control parameters of the output audio signals, e.g. a trumpet sound, controlled by voice.

This is the correct classification for voice-controlled instruments even if the musical voice processing is performed by computer, and even if the output tone is synthesised from a data store under the control of the processed voice signals.

References

Limiting references

This place does not cover:

Recording/reproducing of accompaniment for use with an external source, e.g. karaoke systems: with means for modifying or correcting the external signal, e.g. pitch correction, reverberation, changing a singer's voice	G10H 1/366

Informative references

Attention is drawn to the following places, which may be of interest for search:

Musical analysis of a singing voice signal, including other aspects than pitch	G10H 1/0008, G10H 2210/031 analysis
Mere pitch determination of a musical or singing signal	G10H 3/125
Pitch determination of speech signal in general	G10L 25/90

G10H 5/007

{Real-time simulation of G10B, G10C, G10D-type instruments using recursive or non-linear techniques, e.g. waveguide networks, recursive algorithms}

Definition statement

This place covers:

Physical modelling of acoustic instruments implemented by digital or analogue means (e.g. using computer based simulation).

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Establishing the harmonic content of tones by non-linear elements	G10H 1/16
Synthesising waveforms using a recursive algorithm	G10H 7/12

G10H 7/00

Instruments in which the tones are synthesised from a data store, e.g. computer organs

Definition statement

This place covers:

Computer architecture, computing hardware or waveform computation schemes specific to digital music synthesis.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Synthesis of acoustic waves not specific to musical instruments	G10K 15/02
Speech synthesis	G10L 13/00
Speech or audio signal analysis-synthesis for redundancy reduction	G10L 19/00

Special rules of classification

The G10H 7/00 main group is to be used to classify specific details of:

- Music synthesiser architecture;

- Musical signal processor architecture for musical analysis or musical processing (see narrow definition of "musical") in the glossary;
- Processor load management or waveform processing not otherwise provided by sub-groups of G10H 1/18 or G10H 1/02 respectively;
- For all sub-groups of G10H 7/00, Indexing Codes under G10H 2230/00 ("hardware, shape or architecture aspects") and G10H 2240/00 ("data or communications aspects") provide an orthogonal scheme for indexing features of sub-groups of G10H 7/00;
- As the G10H 7/00 groups are very imprecise regarding actual function, if there are relevant classes in G10H 1/00, G10H 3/00 or G10H 5/007 or G10H 5/005, or corresponding Indexing Codes, they should be systematically assigned in addition to the G10H 7/00 symbols.

G10H 7/008

{Means for controlling the transition from one tone waveform to another}

Definition statement

This place covers:

Transition processing or controlling from one tone or music waveform to another, or from one music segment or music piece to another; means therefor.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Glissando or legato per se	G10H 1/02

Special rules of classification

Documents classified here should be given Indexing Codes under G10H 2210/101 ("composing"; e.g. G10H 2210/125 ("composing medley")), G10H 2250/00 (e.g. G10H 2250/035 ("crossfade")) or G10H 2250/541 ("waveform").

G10H 7/02

in which amplitudes at successive sample points of a tone waveform are stored in one or more memories

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Recording or reproducing of audio signals using Pulse Code Modulation [PCM]	G11B 20/10527

Special rules of classification

Documents classified here should be given Indexing Codes under G10H 2250/541 ("waveform").

G10H 2210/00

Aspects or methods of musical processing having intrinsic musical character, i.e. involving musical theory or musical parameters or relying on musical knowledge, as applied in electrophonic musical tools or instruments

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Aspects of algorithms or signal processing methods without intrinsic musical character, yet specifically adapted for or used in electrophonic musical processing	G10H 2250/00

G10H 2210/005

Musical accompaniment, i.e. complete instrumental rhythm synthesis added to a performed melody, e.g. as output by drum machines

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Background music, e.g. for video sequences or elevator music	G10H 2210/021

G10H 2210/021

Background music, e.g. for video sequences or elevator music

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Musical accompaniment, i.e. complete instrumental rhythm synthesis added to a performed melody, e.g. as output by drum machines	G10H 2210/005

G10H 2210/031

Musical analysis, i.e. isolation, extraction or identification of musical elements or musical parameters from a raw acoustic signal or from an encoded audio signal

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Neural networks for electrophonic musical instruments or musical processing, e.g. for musical recognition or control, automatic composition or improvisation	G10H 2250/311

G10H 2210/071

for rhythm pattern analysis or rhythm style recognition

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Rhythm pattern selection, synthesis or composition	G10H 2210/341

G10H 2210/076

for extraction of timing, tempo; Beat detection

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Tempo or beat alterations; Music timing control	G10H 2210/375
Beat indicator, e.g. marks or flashing LEDs to indicate tempo or beat positions	G10H 2220/081

G10H 2210/115

using a random process to generate a musical note, phrase, sequence or structure

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Random process used to build a rhythm pattern	G10H 2210/356
Random process affecting a selection among a set of pre-established patterns	G10H 2210/366

G10H 2210/161

Note sequence effects, i.e. sensing, altering, controlling, processing or synthesising a note trigger selection or sequence, e.g. by altering trigger timing, triggered note values, adding improvisation or ornaments or also rapid repetition of the same note onset

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Vibrato, i.e. rapid, repetitive and smooth variation of amplitude, pitch or timbre within a note or chord	G10H 2210/201

G10H 2210/191

Tremolo, tremulando, trill or mordent effects, i.e. repeatedly alternating stepwise in pitch between two note pitches or chords, without any portamento between the two notes

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Note sequence effects, i.e. sensing, altering, controlling, processing or synthesising a note trigger selection or sequence, e.g. by altering trigger timing, triggered note values, adding improvisation or ornaments or also rapid repetition of the same note onset	G10H 2210/161
Amplitude vibrato, i.e. repetitive smooth loudness variation without pitch change or rapid repetition of the same note, bisbigliando, amplitude tremolo or tremulants	G10H 2210/205

G10H 2210/195

Modulation effects, i.e. smooth non-discontinuous variations over a time interval, e.g. within a note, melody or musical transition, of any sound parameter, e.g. amplitude, pitch, spectral response or playback speed

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Note sequence effects, i.e. sensing, altering, controlling, processing or synthesising a note trigger selection or sequence, e.g. by altering trigger timing, triggered note values, adding improvisation or ornaments or also rapid repetition of the same note onset	G10H 2210/161

G10H 2210/201

Vibrato, i.e. rapid, repetitive and smooth variation of amplitude, pitch or timbre within a note or chord

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Note sequence effects, i.e. sensing, altering, controlling, processing or synthesising a note trigger selection or sequence, e.g. by altering trigger timing, triggered note values, adding improvisation or ornaments or also rapid repetition of the same note onset	G10H 2210/161
Tremolo, tremulando, trill or mordent effects, i.e. repeatedly alternating stepwise in pitch between two note pitches or chords, without any portamento between the two notes	G10H 2210/191

G10H 2210/205

Amplitude vibrato, i.e. repetitive smooth loudness variation without pitch change or rapid repetition of the same note, bisbigliando, amplitude tremolo or tremulants

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Note sequence effects, i.e. sensing, altering, controlling, processing or synthesising a note trigger selection or sequence, e.g. by altering trigger timing, triggered note values, adding improvisation or ornaments or also rapid repetition of the same note onset	G10H 2210/161

G10H 2210/211

Pitch vibrato, i.e. repetitive and smooth variation in pitch, e.g. as obtainable with a whammy bar or tremolo arm on a guitar

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Tremolo, tremulando, trill or mordent effects, i.e. repeatedly alternating stepwise in pitch between two note pitches or chords, without any portamento between the two notes	G10H 2210/191
Keyboards, i.e. configuration of several keys or key-like input devices relative to one another	G10H 2220/221

G10H 2210/221

Glissando, i.e. pitch smoothly sliding from one note to another, e.g. gliss, glide, slide, bend, smear or sweep

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Arpeggio, i.e. notes played or sung in rapid sequence, one after the other, rather than ringing out simultaneously, e.g. as a chord; Generators therefor, i.e. arpeggiators; Discrete glissando effects on instruments not permitting continuous glissando, e.g. xylophone or piano, with stepwise pitch variation and on which distinct onsets due to successive note triggerings can be heard	G10H 2210/185

G10H 2210/225

Portamento, i.e. smooth continuously variable pitch-bend, without emphasis of each chromatic pitch during the pitch change, which only stops at the end of the pitch shift, as obtained, e.g. by a MIDI pitch wheel or trombone

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Glissando, i.e. pitch smoothly sliding from one note to another, e.g. gliss, glide, slide, bend smear or sweep	G10H 2210/221

G10H 2210/265

Acoustic effect simulation, i.e. volume, spatial, resonance or reverberation effects added to a musical sound, usually by appropriate filtering or delays

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Formant synthesis, i.e. simulating the human speech production mechanism by exciting formant resonators, e.g. mimicking vocal tract filtering as in LPC synthesis vocoders, wherein musical instruments may be used as excitation signal to the time-varying filter estimated from a singer's speech	G10H 2210/481
Room models, i.e. acoustic physical modelling of a room, e.g. concert hall	G10H 2250/531

G10H 2210/295

Spatial effects, musical uses of multiple audio channels, e.g. stereo

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Helmholtz resonance effect, i.e. using, exciting or emulating air resonance in a cavity	G10H 2210/275
Acoustic effect simulation, reverberation or echo	G10H 2210/281

G10H 2210/311

Distortion, i.e. desired non-linear audio processing to change the tone colour, e.g. by adding harmonics or deliberately distorting the amplitude of an audio waveform

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Parabolic or second order polynomials, occurring, e.g. in vacuum tube distortion modelling or for modelling the gate voltage to drain current relationship of a JFET	G10H 2250/201
Third order polynomials, occurring, e.g. in vacuum tube distortion modelling	G10H 2250/205

G10H 2210/315

Dynamic effects for musical purposes, i.e. musical sound effects controlled by the amplitude of the time domain audio envelope, e.g. loudness-dependent tone colour or musically desired dynamic range compression or expansion

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Envelope processing of music signals in, e.g. time domain, transform domain or cepstrum domain	G10H 2250/025

G10H 2210/325

Musical pitch modification

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Pitch analysis as part of wider processing for musical purposes, e.g. transcription, musical performance evaluation; Pitch recognition, e.g. in polyphonic sounds; Estimation or use of missing fundamental	G10H 2210/066
Musical effects	G10H 2210/155

G10H 2210/335

Chord correction, i.e. modifying one or several notes within a chord, e.g. to correct wrong fingering or to improve harmony

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Natural chords, i.e. adjustment of individual note pitches in order to generate just intonation chords	G10H 2210/586

G10H 2210/341

Rhythm pattern selection, synthesis or composition

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Musical accompaniment, i.e. complete instrumental rhythm synthesis added to a performed melody, e.g. as output by drum machines	G10H 2210/005
Musical rhythm pattern analysis or rhythm style recognition	G10H 2210/071

G10H 2210/346

Pattern variations, break or fill-in

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Musical accompaniment, i.e. complete instrumental rhythm synthesis added to a performed melody, e.g. as output by drum machines	G10H 2210/005

G10H 2210/375

Tempo or beat alterations; Music timing control

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Musical analysis for extraction of timing, tempo; Beat detection	G10H 2210/076
Humanizing effects, i.e. causing a performance to sound less machine-like, e.g. by slightly randomising pitch or tempo	G10H 2210/165
Scratch effects, i.e. emulating playback velocity or pitch manipulation effects normally obtained by a disc-jockey manually rotating a LP record forward and backward	G10H 2210/241

Beat indicator, e.g. marks or flashing LEDs to indicate tempo or beat positions	G10H 2220/081

G10H 2210/381

Manual tempo setting or adjustment

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Conductor baton movement detection used to adjust rhythm, tempo or expressivity of, e.g. the playback of musical pieces	G10H 2220/206

G10H 2210/385

Speed change, i.e. variations from preestablished tempo, tempo change, e.g. faster or slower, accelerando or ritardando, without change in pitch

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Scratch effects, i.e. emulating playback velocity or pitch manipulation effects normally obtained by a disc-jockey manually rotating a LP record forward and backward	G10H 2210/241

G10H 2210/395

Special musical scales, i.e. other than the 12-interval equally tempered scale; Special input devices therefor

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Keyboards, i.e. configuration of several keys or key-like input devices relative to one another	G10H 2220/221

G10H 2210/431

Quarter tone scale, i.e. 24 equal intervals per octave, e.g. for Arabic music

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Arabic scales, i.e. either double harmonic scale or major locrian scale; Vosta or zaid modes	G10H 2210/511

G10H 2210/441

Janko scale, i.e. 41 equal intervals per octave, e.g. as used in the "tonal plexus" keyboard with 211 keys per octave arranged in 12 staggered columns, i.e. in 41 regions of 5 keys each plus 6 duplicate enharmonic keys

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Keyboards ergonomically organised for playing chords or for transposing, e.g. Janko keyboard	G10H 2220/251

G10H 2210/461

Jankovski scale or twelfth tone scale, i.e. octave divided in 72 equal intervals, e.g. moria in Byzantine music theory

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Keyboards ergonomically organised for playing chords or for transposing, e.g. Janko keyboard	G10H 2220/251

G10H 2210/471

Natural or just intonation scales, i.e. based on harmonics consonance such that most adjacent pitches are related by harmonically pure ratios of small integers

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Natural chords, i.e. adjustment of individual note pitches in order to generate just intonation chords	G10H 2210/586

G10H 2210/506

Danielou 53 interval scale, with note ratios equal to (2p)(3**q)(5**r), with p, q, r positive or negative integers**

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Holder scale or Holdrian comma, i.e. 53 equal intervals per octave, with 31 intervals equal to an almost just perfect fifth; Keyboards therefor, e.g. "generalized keyboard" of Robert Holford Macdowall Bosanquet	G10H 2210/451

G10H 2210/511

Arabic scales, i.e. either double harmonic scale or major locrian scale; Vosta or zaid modes

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Equally tempered scale, i.e. note tuning scale in which every pair of adjacent notes has an identical frequency ratio equal to 2 to the power 1/n if the scale has n notes per octave	G10H 2210/415
Quarter tone scale, i.e. 24 equal intervals per octave, e.g. for Arabic music	G10H 2210/431

G10H 2210/515

Balinese scales, e.g. for gamelan, with instruments played in pairs and tuned slightly apart to produce interference beating ideally at a consistent speed for all pairs of notes in all registers; Balinese pentatonic scales, e.g. Balinese slendro scale, or five-tone modes of the heptatonic pelog scale, itself substantially a 7-note subset of 9-tone equal temperament

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Pentatonal or pentatonic scale, i.e. five pitches or notes per octave, e.g. basic Chinese musical scale, black piano keys, Javanese gamelan slendro scale or Japanese shakuhachi flute	G10H 2210/541

G10H 2210/531

Bluenote scale, i.e. 7-tone scale of 2+1+2+1+3+1+2 semitones

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Hexatonal or hexatonic scales, i.e. six pitches or notes per octave, e.g. whole tone scale, augmented scale, Prometheus scale or blues scale	G10H 2210/535

G10H 2210/541

Pentatonal or pentatonic scale, i.e. five pitches or notes per octave, e.g. basic Chinese musical scale, black piano keys, Javanese gamelan slendro scale or Japanese shakuhachi flute

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Balinese pentatonic scales, e.g. Balinese slendro scale, or five-tone modes of the heptatonic pelog scale, itself substantially a 7-note subset of 9-tone equal temperament	G10H 2210/515

G10H 2210/555

Tonality processing, involving the key in which a musical piece or melody is played

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Musical analysis for automatic key or tonality recognition, e.g. using musical rules or a knowledge base	G10H 2210/081

G10H 2210/571

Chords; Chord sequences

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Keyboards ergonomically organised for playing chords or for transposing, e.g. Janko keyboard	G10H 2220/251

Spint accordion, i.e. mimicking accordions; Electrophonic instruments with one or more typical accordion features, e.g. special accordion keyboards or bellows, electrophonic aspects of mechanical accordions, MIDI-like control therefor	G10H 2230/245

G10H 2210/586

Natural chords, i.e. adjustment of individual note pitches in order to generate just intonation chords

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Musical analysis, i.e. isolation, extraction or identification of musical elements or musical parameters from a raw acoustic signal or from an encoded audio signal	G10H 2210/031
Chord correction, i.e. modifying one or several notes within a chord, e.g. to correct wrong fingering or to improve harmony	G10H 2210/335
Natural or just intonation scales, i.e. based on harmonics consonance such that most adjacent pitches are related by harmonically pure ratios of small integers	G10H 2210/471

G10H 2220/005

Non-interactive screen display of musical or status data

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Remote key fingering indicator, i.e. fingering shown on a display separate from the instrument itself or substantially disjoint from the keys	G10H 2220/041
Graphical user interface [GUI] specifically adapted for electrophonic musical instruments, e.g. interactive musical displays, musical instrument icons or menus; Details of user interactions therewith	G10H 2220/091

G10H 2220/015

Musical staff, tablature or score displays, e.g. for score reading during a performance

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Musical analysis for transcription of raw audio or music data to a displayed or printed staff representation or to displayable MIDI-like note-oriented data, e.g. in piano roll format	G10H 2210/086

Graphical user interface [GUI] for graphical editing of a musical score, staff or tablature	G10H 2220/121

G10H 2220/021

Indicator, i.e. non-screen output user interfacing, e.g. visual or tactile instrument status or guidance information using lights, LEDs or seven segments displays

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Non-interactive screen display of musical or status data	G10H 2220/005
Graphical user interface [GUI] specifically adapted for electrophonic musical instruments, e.g. interactive musical displays, musical instrument icons or menus; Details of user interactions therewith	G10H 2220/091
Key design details; Special characteristics of individual keys of a keyboard, with controlled tactile or haptic feedback effect; Output interfaces therefor	G10H 2220/311

G10H 2220/081

Beat indicator, e.g. marks or flashing LEDs to indicate tempo or beat positions

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Musical analysis for extraction of timing, tempo; Beat detection	G10H 2210/076
Rhythm pattern selection, synthesis or composition	G10H 2210/341
Tempo or beat alterations; Music timing control	G10H 2210/375

G10H 2220/086

Beats per minute [BPM] indicator, i.e. displaying a tempo value, e.g. in words or as numerical value in beats per minute

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Musical analysis for extraction of timing, tempo; Beat detection	G10H 2210/076
Tempo or beat alterations; Music timing control	G10H 2210/375

G10H 2220/091

Graphical user interface [GUI] specifically adapted for electrophonic musical instruments, e.g. interactive musical displays, musical instrument icons or menus; Details of user interactions therewith

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Input arrangements for interaction between user and computer with interaction techniques based on graphical user interface [GUI]	G06F 3/048

G10H 2220/096

using a touch screen

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Keyboards on touchscreens, i.e. keys, frets, strings, tablature or staff displayed on a touchscreen display for note input purposes	G10H 2220/241
Personal digital assistant [PDA] or palmtop computing devices used for musical purposes, e.g. portable music players, tablet computers, e-readers or smart phones in which mobile telephony functions need not be used	G10H 2230/015

G10H 2220/111

for graphical orchestra or soundstage control, e.g. on-screen selection or positioning of instruments in a virtual orchestra, using movable or selectable musical instrument icons

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Source positioning in a soundscape, e.g. instrument positioning on a virtual soundstage, stereo panning or related delay or reverberation changes; Changing the stereo width of a musical source	G10H 2210/305

G10H 2220/116

for graphical editing of sound parameters or waveforms, e.g. by graphical interactive control of timbre, partials or envelope

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Waveform editing, i.e. setting or modifying parameters for waveform synthesis	G10H 2250/615

G10H 2220/121

for graphical editing of a musical score, staff or tablature

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Musical analysis for transcription of raw audio or music data to a displayed or printed staff representation or to displayable MIDI-like note-oriented data, e.g. in piano roll format	G10H 2210/086
Musical staff, tablature or score displays, e.g. for score reading during a performance	G10H 2220/015

G10H 2220/135

Musical aspects of games or videogames; Musical instrument-shaped game input interfaces

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Background music for games, e.g. videogames	G10H 2210/026
Musical analysis for performance evaluation, i.e. judging, grading or scoring the musical qualities or faithfulness of a performance, e.g. with respect to pitch, tempo or other timings of a reference performance	G10H 2210/091

G10H 2220/141

Games on or about music, i.e. based on musical knowledge, e.g. musical multimedia quizzes

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Teaching music	G09B 15/00

G10H 2220/155

User input interfaces for electrophonic musical instruments

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Graphical user interface [GUI] specially adapted for electrophonic musical instruments	G10H 2220/091
Input/output arrangements for transferring data in general	G06F 3/00

G10H 2220/161

with 2D or x/y surface coordinates sensing

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Microtonal scale, i.e. continuous scale of pitches, also interval-free input devices, e.g. continuous keyboards for violin, singing voice or trombone synthesis	G10H 2210/401
Graphical user interface [GUI] specifically adapted for electrophonic musical instruments, e.g. interactive musical displays, musical instrument icons or menus	G10H 2220/091

G10H 2220/165

for string input, i.e. special characteristics in string composition or use for sensing purposes, e.g. causing the string to become its own sensor

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Plectrum or pick sensing, e.g. for detection of string striking or plucking	G10H 2220/191
Fret-like switch array arrangements for guitar necks	G10H 2220/301

Transducers, i.e. details, positioning or use of assemblies to detect and convert mechanical vibrations or mechanical strains into an electrical signal, e.g. audio, trigger or control signal	G10H 2220/461

G10H 2220/175

using nonmagnetic string materials, e.g. nylon; Sensors specially adapted therefor

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Piezoelectric transducers for vibration sensing or vibration excitation in the audio range; Piezoelectric strain sensing, e.g. as key velocity sensor; Piezoelectric actuators, e.g. key actuation in response to a control voltage	G10H 2220/525

G10H 2220/185

Stick input, e.g. drumsticks with position or contact sensors

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Conductor baton movement detection used to adjust rhythm, tempo or expressivity of, e.g. the playback of musical pieces	G10H 2220/206

G10H 2220/191

Plectrum or pick sensing, e.g. for detection of string striking or plucking

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Plectra or similar accessories for playing; Plectrum holders	G10D 3/173

G10H 2220/211

for microphones, i.e. control of musical parameters either directly from microphone signals or by physically associated peripherals, e.g. karaoke control switches or rhythm sensing accelerometer within the microphone casing

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Loudspeakers, microphones, gramophone pick-ups per se	H04R

G10H 2220/221

Keyboards, i.e. configuration of several keys or key-like input devices relative to one another

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Special musical scales, i.e. other than the 12-interval equally tempered scale; Special input devices therefor	G10H 2210/395
Key design details; Special characteristics of individual keys of a keyboard; Key-like musical input devices, e.g. finger sensors, pedals, potentiometers or selectors	G10H 2220/265
Switch matrix, e.g. contact array common to several keys, the actuated keys being identified by the rows and columns in contact	G10H 2220/295

G10H 2220/236

representing an active musical staff or tablature, i.e. with key-like position sensing at the expected note positions on the staff

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Keyboards on touchscreens, i.e. keys, frets, strings, tablature or staff displayed on a touchscreen display for note input purposes	G10H 2220/241

G10H 2220/251

arranged as 2D or 3D arrays; Keyboards ergonomically organised for playing chords or for transposing, e.g. Janko keyboard

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Spint accordion, i.e. mimicking accordions; Electrophonic instruments with one or more typical accordion features, e.g. special accordion keyboards or bellows, electrophonic aspects of mechanical accordions, MIDI-like control therefor	G10H 2230/245

G10H 2220/265

Key design details; Special characteristics of individual keys of a keyboard; Key-like musical input devices, e.g. finger sensors, pedals, potentiometers, selectors

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Special musical scales, i.e. other than the 12-interval equally tempered scale; Special input devices therefor	G10H 2210/395
Keyboards, i.e. configuration of several keys or key-like input devices relative to one another	G10H 2220/221

G10H 2220/271

Velocity sensing for individual keys, e.g. by placing sensors at different points along the kinematic path for individual key velocity estimation by delay measurement between adjacent sensor signals

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Keyboards, i.e. configuration of several keys or key-like input devices relative to one another	G10H 2220/221

G10H 2220/305

using a light beam to detect key, pedal or note actuation

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Beam sensing or control, light beams	G10H 2220/411

G10H 2220/315

for joystick-like proportional control of musical input; Videogame input devices used for musical input or control, e.g. gamepad, joysticks

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Input arrangements for video game devices	A63F 13/20
Manually-actuated control mechanisms provided with one single controlling member being movable by hand about orthogonal axes, e.g. joysticks	G05G 9/047
Pointing devices displaced or positioned by the user, e.g. joysticks, for converting the position or the displacement of a member into a coded form	G06F 3/033

G10H 2220/321

Garment sensors, i.e. musical control means with trigger surfaces or joint angle sensors, worn as a garment by the player, e.g. bracelet, intelligent clothing

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Vital parameter control of user input interfaces for electrophonic musical instruments, i.e. musical instrument control based on body signals; Biometric information	G10H 2220/371
Input/output arrangements for transferring data in general	G06F 3/00

G10H 2220/336

Control shoe or boot, i.e. sensor-equipped lower part of lower limb, e.g. shoe, toe ring, sock, ankle bracelet or leg control attachment

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Garment sensors, i.e. musical control means with trigger surfaces or joint angle sensors, worn as a garment by the player, e.g. bracelet or intelligent clothing	G10H 2220/321
Floor sensors, e.g. platform or groundsheet with sensors to detect foot position, balance or pressure, steps, stepping rhythm, dancing movements or jumping	G10H 2220/341

G10H 2220/341

Floor sensors, e.g. platform or groundsheet with sensors to detect foot position, balance or pressure, steps, stepping rhythm, dancing movements or jumping

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Control shoe or boot, i.e. sensor-equipped lower part of lower limb, e.g. shoe, toe ring, sock, ankle bracelet or leg control attachment	G10H 2220/336

G10H 2220/346

Hopscotch sensing mats, i.e. including several step sensing zones, e.g. for detection of rhythmic dancing in time to background music according to stepping indications

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Musical analysis for performance evaluation or scoring	G10H 2210/091
Musical aspects of games or videogames	G10H 2220/135
Video games in general	A63F 13/00

G10H 2220/365

Bow control in general, i.e. sensors or transducers on a bow; Input interface or controlling process for emulating a bow, bowing action or generating bowing parameters, e.g. for appropriately controlling a specialised sound synthesiser

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Spint stringed, i.e. mimicking stringed instrument features, electrophonic aspects of acoustic stringed musical instruments without keyboard; MIDI-like control therefor	G10H 2230/075
Bowed string instrument sound generation, controlling specific features of said sound, e.g. use of fret or bow control parameters for violin effects synthesis	G10H 2250/445

G10H 2220/371

Vital parameter control, i.e. musical instrument control based on body signals, e.g. brainwaves, pulsation, temperature or perspiration; Biometric information

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Garment sensors, i.e. musical control means with trigger surfaces or joint angle sensors, worn as a garment by the player, e.g. bracelet or intelligent clothing	G10H 2220/321

G10H 2220/391

Angle sensing for musical purposes, using data from a gyroscope, gyrometer or other angular velocity or angular movement sensing device

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Garment sensors, i.e. musical control means with trigger surfaces or joint angle sensors, worn as a garment by the player, e.g. bracelet or intelligent clothing	G10H 2220/321
Acceleration sensing or accelerometer use, e.g. 3D movement computation by integration of accelerometer data, angle sensing with respect to the vertical, i.e. gravity sensing	G10H 2220/395
User input interfaces for electrophonic musical instruments with 3D sensing, i.e. three-dimensional (x, y, z) position or movement sensing	G10H 2220/401

G10H 2220/395

Acceleration sensing or accelerometer use, e.g. 3D movement computation by integration of accelerometer data, angle sensing with respect to the vertical, i.e. gravity sensing

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Conductor baton movement detection used to adjust rhythm, tempo or expressivity of, e.g. the playback of musical pieces	G10H 2220/206
Garment sensors, i.e. musical control means with trigger surfaces or joint angle sensors, worn as a garment by the player, e.g. bracelet or intelligent clothing	G10H 2220/321
Angle sensing for musical purposes, using data from a gyroscope, gyrometer or other angular velocity or angular movement sensing device	G10H 2220/391

G10H 2220/401

3D sensing, i.e. three-dimensional (x, y, z) position or movement sensing

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

User input interfaces for electrophonic musical instruments for movement interpretation, i.e. capturing and recognizing a gesture or a specific kind of movement, e.g. to control a musical instrument	G10H 2220/201
Geolocation input, i.e. control of musical parameters based on location or geographic position, e.g. provided by GPS, WiFi network location databases or mobile phone base station position databases	G10H 2220/355
Acceleration sensing or accelerometer use, e.g. 3D movement computation by integration of accelerometer data, angle sensing with respect to the vertical, i.e. gravity sensing	G10H 2220/395

G10H 2220/405

Beam sensing or control, i.e. input interfaces involving substantially immaterial beams, radiation, or fields of any nature, used, e.g. as a switch as in a light barrier, or as a control device, e.g. using the theremin electric field sensing principle

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Spint theremin, i.e. mimicking electrophonic musical instruments in which tones are controlled or triggered in a touch-free manner by interaction with beams, jets or fields, e.g. theremin, air guitar or water jet controlled musical instrument, i.e. hydrolauphone	G10H 2230/051

G10H 2220/411

Light beams

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Special characteristics of individual keys of a keyboard using a light beam to detect key, pedal or note actuation	G10H 2220/305

G10H 2220/441

Image sensing, i.e. capturing images or optical patterns for musical purposes or musical control purposes

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Image analysis	G06T 7/00
Character recognition based on music notations	G06V 30/304

G10H 2220/445

Bar codes or similar machine readable optical code patterns, e.g. two dimensional mesh pattern, for musical input or control purposes

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Methods for sensing record carriers by electromagnetic radiation, e.g. optical sensing	G06K 7/10

G10H 2220/461

Transducers, i.e. details, positioning or use of assemblies to detect and convert mechanical vibrations or mechanical strains into an electrical signal, e.g. audio, trigger or control signal

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Special adaptations of transducers for use as contact microphones, e.g. on musical instrument	H04R 1/46

G10H 2220/565

Shielding, electromagnetic or magnetic, e.g. for transducers, i.e. for controlling, orienting or suppressing magnetic fields or for preventing unintentional generation, propagation and reception of electromagnetic energy in electrophonic musical instruments, their vicinity or their interconnections

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Dual coil electrodynamic string transducer, e.g. for humbucking, to cancel out parasitic magnetic fields	G10H 2220/505

G10H 2230/015

PDA [personal digital assistant] or palmtop computing devices used for musical purposes, e.g. portable music players, tablet computers, e-readers or smart phones in which mobile telephony functions need not be used

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Graphical user interface [GUI] specifically adapted for electrophonic musical instruments using a touch screen	G10H 2220/096

G10H 2230/021

Mobile ringtone, i.e. generation, transmission, conversion or downloading of ringing tones or other sounds for mobile telephony; Special musical data formats or protocols therefor

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Mobile telephone transmission, i.e. transmitting, accessing or controlling music data wirelessly via a wireless or mobile telephone receiver, analogue or digital, e.g. DECT GSM or UMTS	G10H 2240/251

G10H 2230/075

Spint stringed, i.e. mimicking stringed instrument features, electrophonic aspects of acoustic stringed musical instruments without keyboard; MIDI-like control therefor

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Gensound string, i.e. generating the sound of a string instrument, controlling specific features of said sound	G10H 2250/441

G10H 2230/105

Spint dulcimer, i.e. mimicking any zither-like instrument with small hand-played mallet hammers

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Spint zither, i.e. mimicking any neckless stringed instrument in which the strings do not extend beyond the sounding board	G10H 2230/095

G10H 2230/121

Spint mandolin, i.e. mimicking instruments of the lute family with hard sounding board, e.g. with strings arranged and tuned in pairs for tremolo playing

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Spint banjo, i.e. mimicking a stringed instrument with a piece of plastic or animal skin stretched over a circular frame or gourd, e.g. shamisen or other skin-covered lutes	G10H 2230/151

G10H 2230/155

Spint wind instrument, i.e. mimicking musical wind instrument features; Electrophonic aspects of acoustic wind instruments; MIDI-like control therefor

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Mouth control in general, i.e. breath, mouth, teeth, tongue or lip-controlled input devices or sensors detecting, e.g. lip position, lip vibration, air pressure, air velocity, air flow or air jet angle	G10H 2220/361
Natural aerodynamic noises, e.g. wind gust sounds, rustling leaves or beating sails	G10H 2250/431
Gensound wind instruments, i.e. generating or synthesising the sound of a wind instrument, controlling specific features of said sound	G10H 2250/461

G10H 2230/181

Spint trombone, i.e. mimicking trombones or other slide musical instruments permitting a continuous musical scale

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Microtonal scale, i.e. continuous scale of pitches, also interval-free input devices, e.g. continuous keyboards for violin, singing voice or trombone synthesis	G10H 2210/401

G10H 2230/185

Spint horn, i.e. mimicking conical bore brass instruments

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Spint clarinet, i.e. mimicking any member of the single reed cylindrical bore woodwind instrument family, e.g. piccolo clarinet, octocontrabass, chalumeau, hornpipes or zhaleika	G10H 2230/241

G10H 2230/191

Spint French horn, i.e. mimicking an orchestral horn with valves for switching pipe lengths

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Spint wind instrument, Spint English horn	G10H 2230/231

G10H 2230/195

Spint flute, i.e. mimicking or emulating a transverse flute or air jet sensor arrangement therefor, e.g. sensing angle or lip position to trigger octave change

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Mouth control in general, i.e. breath, mouth, teeth, tongue or lip-controlled input devices or sensors detecting, e.g. lip position, lip vibration, air pressure, air velocity, air flow or air jet angle	G10H 2220/361

Spint whistle, i.e. mimicking wind instruments in which the air is split against an edge, e.g. musical whistles, three tone samba whistle, penny whistle or pea whistle; Whistle-emulating mouth interfaces; MIDI control therefor, e.g. for calliope	G10H 2230/161

G10H 2230/201

Spint piccolo, i.e. half-size transverse flute, e.g. ottavino

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Spint clarinet, i.e. mimicking any member of the single reed cylindrical bore woodwind instrument family, e.g. piccolo clarinet, octocontrabass, chalumeau, hornpipes or zhaleika	G10H 2230/241

G10H 2230/211

Spint harmonica, i.e. mimicking mouth operated wind instruments with multiple tuned free reeds, a.k.a. harmonica, blues harp, mouth organ, pitch pipe or ChengGong

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Spint accordion, i.e. mimicking accordions; Electrophonic instruments with one or more typical accordion features, e.g. special accordion keyboards or bellows, electrophonic aspects of mechanical accordions, MIDI-like control therefor	G10H 2230/245

G10H 2230/251

Spint percussion, i.e. mimicking percussion instruments; Electrophonic musical instruments with percussion instrument features; Electrophonic aspects of acoustic percussion instruments or MIDI-like control therefor

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Gensound percussion, i.e. generating or synthesising the sound of a percussion instrument; Control of specific aspects of percussion sounds, e.g. harmonics, under the influence of hitting force, hitting position, settings or striking instruments such as mallet, drumstick, brush or hand	G10H 2250/435

G10H 2230/281

Spint drum assembly, i.e. mimicking two or more drums or drumpads assembled on a common structure, e.g. drum kit

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Spint xylophone, i.e. mimicking any multi-toned percussion instrument with a multiplicity of tuned resonating bodies, regardless of their material or shape, e.g. xylophone, vibraphone, lithophone, metallophone, marimba, balafon, ranat, gambang or angklung	G10H 2230/255

G10H 2230/351

Spint bell, i.e. mimicking bells, e.g. cow-bells

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Resonating devices having the shape of a bell, plate, rod or tube	G10K 1/06

G10H 2240/005

Data structures for use in electrophonic musical devices; Data structures including musical parameters derived from musical analysis

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Information retrieval of audio data	G06F 16/60

G10H 2240/011

Files or data streams containing coded musical information, e.g. for transmission

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Coding or decoding of speech or audio signals	G10L 19/00

G10H 2240/016

File editing, i.e. modifying musical data files or streams as such

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Graphical user interface [GUI] specifically adapted for electrophonic musical instruments, e.g. interactive musical displays, musical instrument icons or menus; Details of user interactions therewith	G10H 2220/091

G10H 2240/026

File encryption of specific electrophonic music instrument file or stream formats, e.g. MIDI, note oriented formats, sound banks, wavetables

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Security arrangements for protecting computers against unauthorised activity, digital rights management [DRM]	G06F 21/00
Arrangements for secret or secure communications; Network security protocols	H04L 9/00

G10H 2240/041

File watermark, i.e. embedding a hidden code in an electrophonic musical instrument file or stream for identification or authentification purposes

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Audio watermarking	G10L 19/018

G10H 2240/046

File format, i.e. specific or non-standard musical file format used in or adapted for electrophonic musical instruments, e.g. in wavetables

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Details of musical waveform synthesis, i.e. audio waveshape processing from individual wavetable samples, independently of their origin or of the sound they represent	G10H 2250/541

G10H 2240/066

MPEG audio-visual compression file formats, e.g. MPEG-4 for coding of audio-visual objects

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

File format, MP3, i.e. MPEG-1 or MPEG-2 Audio Layer III, lossy audio compression	G10H 2240/061

G10H 2240/075

Musical metadata derived from musical analysis or for use in electrophonic musical instruments

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Data organisation info, i.e. juxtaposition of unrelated auxiliary information or commercial messages with or between music files	G10H 2240/091
Information retrieval of audio data	G06F 16/60

G10H 2240/081

Genre classification, i.e. descriptive metadata for classification or selection of musical pieces according to style

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Musical analysis of musical genre, i.e. analysing the style of musical pieces, usually for selection, filtering or classification	G10H 2210/036

G10H 2240/091

Info, i.e. juxtaposition of unrelated auxiliary information or commercial messages with or between music files

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Musical metadata derived from musical analysis or for use in electrophonic musical instruments	G10H 2240/075

G10H 2240/121

Musical libraries, i.e. musical databases indexed by musical parameters, wavetables, indexing schemes using musical parameters, musical rule bases or knowledge bases, e.g. for automatic composing methods

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Information retrieval of audio data	G06F 16/60

G10H 2240/151

Thumbnail, i.e. retrieving, playing or managing a short and musically relevant song preview from a library, e.g. the chorus

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Musical analysis for extraction of musical phrases, isolation of musically relevant segments, e.g. musical thumbnail generation, or for temporal structure analysis of a musical piece, e.g. determination of the movement sequence of a musical work	G10H 2210/061

G10H 2240/155

Library update, i.e. making or modifying a musical database using musical parameters as indices

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Data structures for use in electrophonic musical devices; Data structures including musical parameters derived from musical analysis	G10H 2240/005

G10H 2240/161

Memory and use thereof, in electrophonic musical instruments, e.g. memory map

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Use of cache memory for electrophonic musical instrument processes, e.g. for improving processing capabilities or solving interfacing problems	G10H 2230/031

Data structures for use in electrophonic musical devices; Data structures including musical parameters derived from musical analysis	G10H 2240/005
Files or data streams containing coded musical information, e.g. for transmission	G10H 2240/011
Musical libraries, i.e. musical databases indexed by musical parameters, wavetables, indexing schemes using musical parameters, musical rule bases or knowledge bases, e.g. for automatic composing methods	G10H 2240/121

G10H 2240/171

Transmission of musical instrument data, control or status information; Transmission, remote access or control of music data for electrophonic musical instruments

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Files or data streams containing coded musical information, e.g. for transmission	G10H 2240/011

G10H 2240/211

Wireless transmission, e.g. of music parameters or control data by radio, infrared or ultrasound

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Beam sensing or control, i.e. input interfaces involving substantially immaterial beams, radiation, or fields of any nature, used, e.g. as a switch as in a light barrier, or as a control device, e.g. using the theremin electric field sensing principle	G10H 2220/405

G10H 2240/251

Mobile telephone transmission, i.e. transmitting, accessing or controlling music data wirelessly via a wireless or mobile telephone receiver, analogue or digital, e.g. DECT, GSM, UMTS

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Personal digital assistant [PDA] or palmtop computing devices used for musical purposes, e.g. portable music players, tablet computers, e-readers or smart phones in which mobile telephony functions need not be used	G10H 2230/015

Mobile ringtone, i.e. generation, transmission, conversion or downloading of ringing tones or other sounds for mobile telephony; Special musical data formats or protocols therefor	G10H 2230/021

G10H 2240/295

Packet switched network, e.g. token ring

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Telephone transmission, i.e. using twisted pair telephone lines or any type of telephone network	G10H 2240/241

G10H 2240/325

Synchronizing two or more audio tracks or files according to musical features or musical timings

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Lyrics displays, e.g. for karaoke applications	G10H 2220/011

G10H 2250/00

Aspects of algorithms or signal processing methods without intrinsic musical character, yet specifically adapted for or used in electrophonic musical processing

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Aspects or methods of musical processing having intrinsic musical character, i.e. involving musical theory or musical parameters or relying on musical knowledge, as applied in electrophonic musical tools or instruments	G10H 2210/00

G10H 2250/005

Algorithms for electrophonic musical instruments or musical processing, e.g. for automatic composition or resource allocation

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Mathematical functions for musical analysis, processing, synthesis or composition	G10H 2250/131
Details of musical waveform synthesis, i.e. audio waveshape processing from individual wavetable samples, independently of their origin or of the sound they represent	G10H 2250/541

G10H 2250/021

Dynamic programming, e.g. Viterbi, for finding the most likely or most desirable sequence in music analysis, processing or composition

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Sequence estimation using the Viterbi algorithm or Viterbi processors	H03M 13/41

G10H 2250/035

Crossfade, i.e. time domain amplitude envelope control of the transition between musical sounds or melodies, obtained for musical purposes, e.g. for ADSR tone generation, articulations, medley, remix

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Studio equipment for generating broadcast information; Interconnection of studios	H04H 60/04

G10H 2250/041

Delay lines applied to musical processing

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Acoustic effect simulation being reverberation or echo	G10H 2210/281

Time-delay networks comprising electromechanical or electro-acoustic devices	H03H 9/30
Arrangements having a single output and transforming input signals into pulses delivered at desired time intervals using a chain of active delay devices	H03K 5/133

G10H 2250/055

Filters for musical processing or musical effects; Filter responses, filter architecture, filter coefficients or control parameters therefor

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Tone control or bandwidth control in amplifiers	H03G 5/00
Combinations of two or more types of control, e.g. gain control and tone control	H03G 9/00
Current or voltage-controlled filters of frequency selective two-port networks using amplifiers with feedback	H03H 11/1291
Networks using digital techniques	H03H 17/00

G10H 2250/071

All pole filter, i.e. autoregressive [AR] filter

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Impulse response, i.e. filters defined or specified by their temporal impulse response features, e.g. for echo or reverberation applications, Infinite impulse response [IIR]	G10H 2250/121

G10H 2250/075

All zero filter, i.e. moving average [MA] filter or finite impulse response [FIR] filter

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Finite impulse response [FIR], e.g. for echoes or room acoustics, the shape of the impulse response is specified in particular according to delay times	G10H 2250/115

G10H 2250/091

Chebyshev filters

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Chebyshev polynomials, e.g. to provide filter coefficients for sharp roll-off filters	G10H 2250/191

G10H 2250/111

Impulse response, i.e. filters defined or specified by their temporal impulse response features, e.g. for echo or reverberation applications

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Acoustic effect simulation, reverberation or echo	G10H 2210/281

G10H 2250/115

FIR impulse, e.g. for echoes or room acoustics, the shape of the impulse response is specified in particular according to delay times

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

All zero filter, i.e. moving average [MA] filter or finite impulse response [FIR] filter	G10H 2250/075

G10H 2250/121

IIR impulse

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Filter responses, filter architecture, filter coefficients or control parameters therefor, all pole filter, i.e. autoregressive [AR] filter	G10H 2250/071

G10H 2250/131

Mathematical functions for musical analysis, processing, synthesis or composition

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Algorithms for musical processing	G10H 2250/005
Methods for evaluating functions by calculations	G06F 7/544
Complex mathematical operations	G06F 17/10

G10H 2250/145

Convolution, e.g. of a music input signal with a desired impulse response to compute an output

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Transforms, i.e. mathematical transforms into domains appropriate for musical signal processing, coding or compression	G10H 2250/215

G10H 2250/191

Chebyshev polynomials, e.g. to provide filter coefficients for sharp rolloff filters

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Filter responses, filter architecture, filter coefficients or control parameters therefor, Chebyshev filters	G10H 2250/091
Chebyshev window	G10H 2250/271

G10H 2250/211

Random number generators, pseudorandom generators, classes of functions therefor

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Shielding, electromagnetic or magnetic, e.g. for transducers, i.e. for controlling, orienting or suppressing magnetic fields or for preventing unintentional generation, propagation and reception of electromagnetic energy in electrophonic musical instruments, their vicinity or their interconnections	G10H 2220/565
Noise generation, its use, control or rejection for music processing	G10H 2250/295
Use of noise in formant synthesis	G10H 2250/495

G10H 2250/221

Cosine transform; DCT [discrete cosine transform], e.g. for use in lossy audio compression such as MP3

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

File format, MP3, i.e. MPEG-1 or MPEG-2 Audio Layer III, lossy audio compression	G10H 2240/061

G10H 2250/225

MDCT [Modified discrete cosine transform], i.e. based on a DCT of overlapping data

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Adaptive MDCT-based compression, e.g. using a hybrid subband-MDCT, as in ATRAC	G10H 2250/575

G10H 2250/271

Chebyshev window

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Chebyshev filters	G10H 2250/091
Chebyshev polynomials, e.g. to provide filter coefficients for sharp roll-off filters	G10H 2250/191

G10H 2250/295

Noise generation, its use, control or rejection for music processing

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Random number generators, pseudorandom generators for musical analysis, processing, synthesis or composition	G10H 2250/211
Use of noise in formant synthesis	G10H 2250/495
Detection of presence or absence of voice signals for discriminating voice from noise	G10L 25/84
Automatic control in amplifiers having semiconductor devices, being dependent upon ambient noise level or sound level	H03G 3/32

G10H 2250/305

Noise or artifact control in electrophonic musical instruments

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Shielding, electromagnetic or magnetic, e.g. for transducers, i.e. for controlling, orienting or suppressing magnetic fields or for preventing unintentional generation, propagation and reception of electromagnetic energy in electrophonic musical instruments, their vicinity or their interconnections	G10H 2220/565
Notch filters for musical processing or musical effects	G10H 2250/125
Aliasing, i.e. preventing, eliminating or deliberately using aliasing noise, distortions or artifacts in sampled or synthesised waveforms, e.g. by band limiting, oversampling or undersampling, respectively	G10H 2250/545

G10H 2250/311

Neural networks for electrophonic musical instruments or musical processing, e.g. for musical recognition or control, automatic composition or improvisation

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Musical analysis	G10H 2210/031
Neural networks	G06N 3/02

G10H 2250/315

Sound category-dependent sound synthesis processes [Gensound] for musical use; Sound category-specific synthesis-controlling parameters or control means therefor

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

General musical sound synthesis principles, i.e. sound category-independent synthesis methods	G10H 2250/471
Details of musical waveform synthesis, i.e. audio waveshape processing from individual wavetable samples, independently of their origin or of the sound they represent	G10H 2250/541

G10H 2250/365

Gensound applause, e.g. handclapping; Cheering; Booing

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Crowds, e.g. restaurant, waiting hall, demonstration or subway corridor at rush hour	G10H 2250/401

G10H 2250/401

Crowds, e.g. restaurant, waiting hall, demonstration or subway corridor at rush hour

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Gensound applause, e.g. handclapping; Cheering; Booing	G10H 2250/365

G10H 2250/431

Natural aerodynamic noises, e.g. wind gust sounds, rustling leaves or beating sails

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Spint wind instrument, i.e. mimicking musical wind instrument features; Electrophonic aspects of acoustic wind instruments; MIDI-like control therefor	G10H 2230/155
Gensound wind instruments, i.e. generating or synthesising the sound of a wind instrument, controlling specific features of said sound	G10H 2250/461

G10H 2250/435

Gensound percussion, i.e. generating or synthesising the sound of a percussion instrument; Control of specific aspects of percussion sounds, e.g. harmonics, under the influence of hitting force, hitting position, settings or striking instruments such as mallet, drumstick, brush or hand

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Spint wind instrument, Spint English horn	G10H 2230/231

G10H 2250/441

Gensound string, i.e. generating the sound of a string instrument, controlling specific features of said sound

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Spint piano, i.e. mimicking acoustic musical instruments with piano, cembalo or spinet features, e.g. with piano-like keyboard; Electrophonic aspects of piano-like acoustic keyboard instruments; MIDI-like control therefor	G10H 2230/065
Spint stringed, i.e. mimicking stringed instrument features, electrophonic aspects of acoustic stringed musical instruments without keyboard; MIDI-like control therefor	G10H 2230/075

G10H 2250/445

Bowed string instrument sound generation, controlling specific features of said sound, e.g. use of fret or bow control parameters for violin effects synthesis

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Modulation effects, i.e. smooth non-discontinuous variations over a time interval, e.g. within a note, melody or musical transition, of any sound parameter, e.g. amplitude, pitch, spectral response, playback speed	G10H 2210/195
Bow control in general, i.e. sensors or transducers on a bow; Input interface or controlling process for emulating a bow, bowing action or generating bowing parameters, e.g. for appropriately controlling a specialised sound synthesiser	G10H 2220/365
Spint stringed, i.e. mimicking stringed instrument features, electrophonic aspects of acoustic stringed musical instruments without keyboard; MIDI-like control therefor, spint viola	G10H 2230/081
Spint stringed, i.e. mimicking stringed instrument features, electrophonic aspects of acoustic stringed musical instruments without keyboard; MIDI-like control therefor, spint cello	G10H 2230/085

G10H 2250/451

Plucked or struck string instrument sound synthesis, controlling specific features of said sound

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Spint harpsichord, i.e. mimicking plucked keyboard instruments, e.g. harpsichord, virginal, muselar, spinet, clavicytherium, ottavino, archicembalo	G10H 2230/071
Spint stringed, i.e. mimicking stringed instrument features, electrophonic aspects of acoustic stringed musical instruments without keyboard; MIDI-like control therefor	G10H 2230/075

G10H 2250/455

Gensound singing voices, i.e. generation of human voices for musical applications, vocal singing sounds or intelligible words at a desired pitch or with desired vocal effects, e.g. by phoneme synthesis

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Modulation effects	G10H 2210/195
Ensemble, i.e. adding one or more voices, also instrumental voices	G10H 2210/245
Formant synthesis	G10H 2250/481
Parcor synthesis	G10H 2250/505
Speech synthesis; Text to speech systems	G10L 13/00

G10H 2250/461

Gensound wind instruments, i.e. generating or synthesising the sound of a wind instrument, controlling specific features of said sound

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Mouth control in general, i.e. breath, mouth, teeth, tongue or lip-controlled input devices or sensors detecting, e.g. lip position, lip vibration, air pressure, air velocity, air flow or air jet angle	G10H 2220/361
Spint wind instrument, i.e. mimicking musical wind instrument features; Electrophonic aspects of acoustic wind instruments; MIDI-like control therefor	G10H 2230/155
Natural aerodynamic noises, e.g. wind gust sounds, rustling leaves or beating sails	G10H 2250/431

G10H 2250/465

Reed instrument sound synthesis, controlling specific features of said sound

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Spint reed, i.e. mimicking or emulating reed instruments, sensors or interfaces therefor	G10H 2230/205

G10H 2250/471

General musical sound synthesis principles, i.e. sound category-independent synthesis methods

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Special instrument [spint], i.e. mimicking the ergonomy, shape, sound or other characteristic of a specific acoustic musical instrument category	G10H 2230/045
Sound category-dependent sound synthesis processes [Gensound] for musical use	G10H 2250/315
Details of musical waveform synthesis, i.e. audio waveshape processing from individual wavetable samples, independently of their origin or of the sound they represent	G10H 2250/541

G10H 2250/481

Formant synthesis, i.e. simulating the human speech production mechanism by exciting formant resonators, e.g. mimicking vocal tract filtering as in LPC synthesis vocoders, wherein musical instruments may be used as excitation signal to the time-varying filter estimated from a singer's speech

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Helmholtz resonance effect, i.e. using, exciting or emulating air resonance in a cavity	G10H 2210/275
Gensound singing voices, i.e. generation of human voices for musical applications, vocal singing sounds or intelligible words at a desired pitch or with desired vocal effects, e.g. by phoneme synthesis	G10H 2250/455
PARCOR synthesis, i.e. music synthesis using partial autocorrelation techniques, e.g. in which the impulse response of the digital filter in a PARCOR speech synthesizer is used as a musical signal	G10H 2250/505

G10H 2250/501

Formant frequency shifting, sliding formants

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Wah-wah spectral modulation, i.e. tone colour spectral glide obtained by sweeping the peak of a bandpass filter up or down in frequency, e.g. according to the position of a pedal, by automatic modulation or by voice formant detection; Control devices therefor, e.g. wah pedals for electric guitars	G10H 2210/231

G10H 2250/505

Parcor synthesis, i.e. music synthesis using partial autocorrelation techniques, e.g. in which the impulse response of the digital filter in a parcor speech synthesizer is used as a musical signal

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Gensound singing voices, i.e. generation of human voices for musical applications, vocal singing sounds or intelligible words at a desired pitch or with desired vocal effects, e.g. by phoneme synthesis	G10H 2250/455
Formant synthesis, i.e. simulating the human speech production mechanism by exciting formant resonators, e.g. mimicking vocal tract filtering as in LPC synthesis vocoders, wherein musical instruments may be used as excitation signal to the time-varying filter estimated from a singer's speech	G10H 2250/481

G10H 2250/511

Physical modelling or real-time simulation of the acoustomechanical behaviour of acoustic musical instruments using, e.g. waveguides or looped delay lines

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Systems involving the use of models or simulators of said systems	G05B 17/00

G10H 2250/531

Room models, i.e. acoustic physical modelling of a room, e.g. concert hall

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Acoustic effect simulation, reverberation or echo	G10H 2210/281
Soundscape or sound field simulation, reproduction or control for musical purposes, e.g. surround or 3D sound; Granular synthesis	G10H 2210/301

G10H 2250/541

Details of musical waveform synthesis, i.e. audio waveshape processing from individual wavetable samples, independently of their origin or of the sound they represent

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Special instrument [spint], i.e. mimicking the ergonomy, shape, sound or other characteristic of a specific acoustic musical instrument category	G10H 2230/045
Sound category-dependent sound synthesis processes [Gensound] for musical use	G10H 2250/315
General musical sound synthesis principles, i.e. sound category-independent synthesis methods	G10H 2250/471

G10H 2250/561

Parabolic waveform approximation, e.g. using second order polynomials or parabolic responses

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Parabolic or second order polynomials, occurring, e.g. in vacuum tube distortion modelling or for modelling the gate voltage to drain current relationship of a JFET	G10H 2250/201

G10H 2250/565

Polynomial waveform approximation, i.e. using polynomials of third order or higher

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Third order polynomials, occurring, e.g. in vacuum tube distortion modelling	G10H 2250/205

G10H 2250/571

Waveform compression, adapted for music synthesisers, sound banks or wavetables

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Speech or audio signals analysis-synthesis techniques for redundancy reduction	G10L 19/00

G10H 2250/575

Adaptive MDCT-based compression, e.g. using a hybrid subband-MDCT, as in ATRAC

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Modified discrete cosine transform [MDCT], i.e. based on a discrete cosine transform [DCT] of overlapping data	G10H 2250/225

G10H 2250/615

Waveform editing, i.e. setting or modifying parameters for waveform synthesis

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Graphical user interface [GUI] specifically adapted for electrophonic musical instruments for graphical editing of sound parameters or waveforms, e.g. by graphical interactive control of timbre, partials or envelope	G10H 2220/116

G10H 2250/631

Waveform resampling, i.e. sample rate conversion or sample depth conversion

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Waveform decimation, i.e. integer division of the sampling rate for reducing the number of samples in a discrete-time signal, e.g. by low-pass anti-alias filtering followed by the actual downsampling	G10H 2250/611