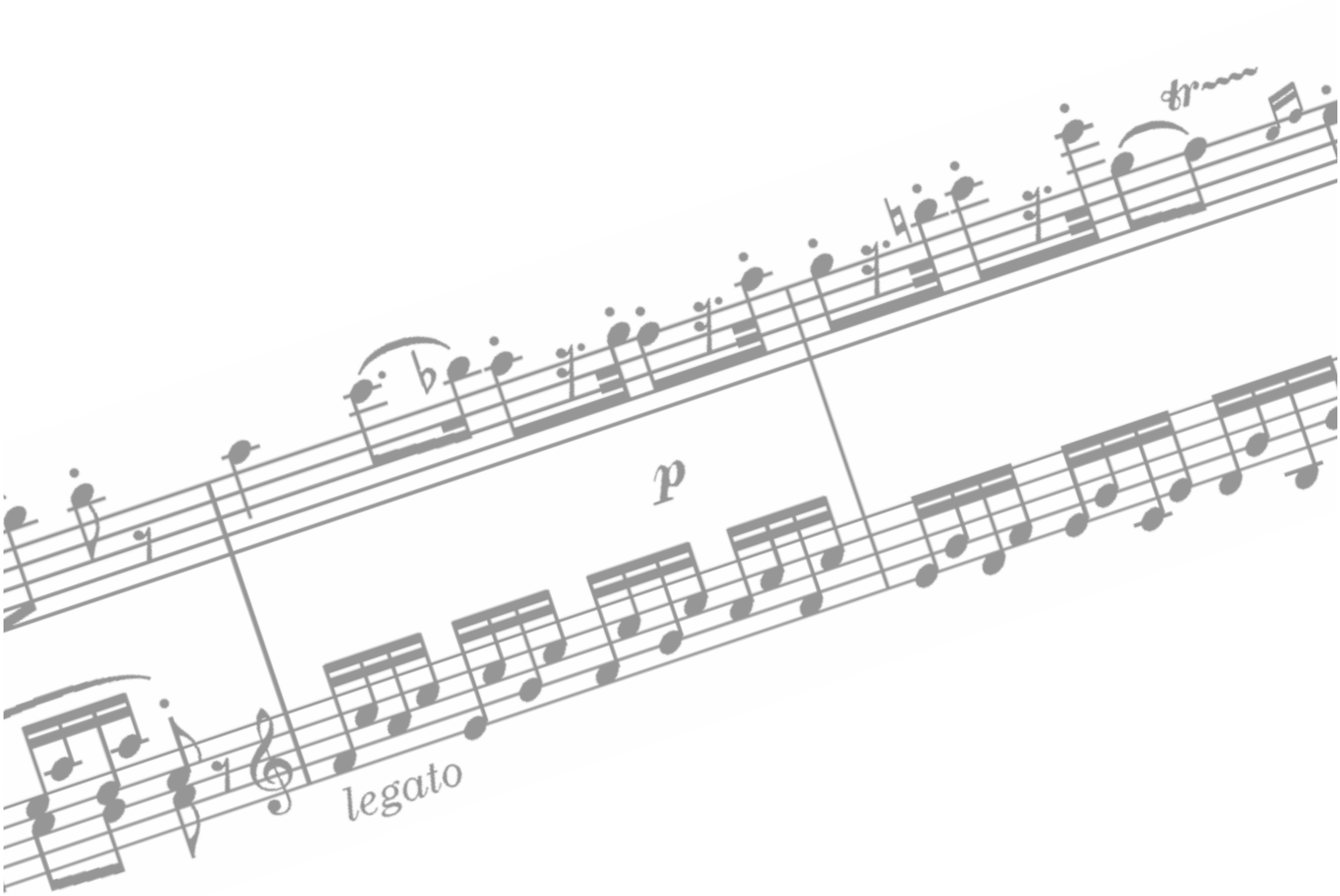
steinberg



SMuFL

Standard Music Font Layout

Version 0.7-draft (2013-10-28)

Acknowledgements

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This document also reproduces some glyphs from the Unicode 6.2 code chart for the Musical Symbols range (http://www.unicode.org/charts/PDF/U1D100.pdf). These glyphs are the copyright of their respective copyright holders, listed on the Unicode Consortium web site here:

http://www.unicode.org/charts/fonts.html

Version history

Version 0.1 (2013-01-31)

- Initial version.

Version 0.2 (2013-02-08)

- Added **Tick barline** (U+E036).
- Changed names of time signature, tuplet and figured bass digit glyphs to ensure that they are unique.
- Add upside-down and reversed G, F and C clefs for canzicrans and inverted canons (U+E074–U+E078).
- Added **Time signature +** (U+E08C) and **Time signature fraction slash** (U+E08D) glyphs.
- Added **Black diamond notehead** (U+E0BC), **White diamond notehead** (U+E0BD), **Half-filled diamond notehead** (U+E0BE), **Black circled notehead** (U+E0BF), **White circled notehead** (U+E0C0) glyphs.
- Added 256th and 512th note glyphs (U+E110–U+E113).
- All symbols shown on combining stems now also exist as separate symbols.
- Added reversed sharp, natural, double flat and inverted flat and double flat glyphs (U+E172–U+E176) for canzicrans and inverted canons.
- Added trill wiggle segment (U+E214), glissando wiggle segment (U+E596) and arpeggiato wiggle segment (U+E47D) glyphs.
- Added string **Half-harmonic** (U+E2A3), **Overpressure down bow** (U+E2A9) and **Overpressure up bow** (U+E2AA) glyphs.
- Added **Breath mark** (U+E2D0) glyph.
- Added angled beater pictograms for xylophone, timpani and yarn beaters.
- Added alternative glyph for **Half-open** (U+E445), per Weinberg.
- Added **Scrape from rim to center** (U+E46A) and **Scrape around rim** (U+E46B) glyphs.
- Added **Start of stimme** (U+E4B2) glyph.
- Added colon for tuplet ratios (U+E502).
- Added stem down versions of mensural notes (U+E575 etc.), and signum congruentia and custos glyphs.
- Added three additional mensuration signs (U+E5B3, U+E5B7, U+E5BA).
- Added Riemann Function theorys glyphs (U+E630–U+E652).

Version 0.3 (2013-03-11):

- Moved combining flags glyphs U+E14A and U+E14B to U+E14E and U+E14F to accommodate glyphs for 256th note stem up (U+E14A), 256th note stem down (U+E14B), 512th note stem up (U+E14C) and 512th note stem down (U+E14D).

Version 0.4 (2013-05-16):

- Added range for Arel-Ezgi-Uzdilek (AEU) accidentals for Turkish maqam music (U+E660–U+E667).
- Added equals sign (U+E08E) and open time signature (U+E08F) glyphs.

Version 0.5 (2013-07-08):

- Many existing code points have been changed, as a result of hundreds of new glyphs being added, plus a number of new ranges.
- Added long (U+E008) and very long (U+E009) system dividers for very large scores.
- Added heavy (U+E034), double heavy (U+E035) and dotted (U+E037) barlines.
- Added square coda (U+E047) and small repeat signs for repeats within bars (U+E04A, U+E04B).
- Added recommended stylistic alternates for segno (U+E045) and coda (U+E046) for the appearance preferred by Japanese publishers.
- Added quindicesima bassa G clef (U+E061) and F clef (U+E070), G clef combined with C clef (U+E066), G clefs designed to be ligated with numbers below and above to show the transposition of an instrument (U+E067, U+E068), plus recommended ligatures for G and F clefs with numbers above and below; also added G, C and F clefs with arrows up and down, which may be used either as alternatives for octave clefs or to represent the extremes of register on an instrument (U+E069, U+E06A, U+E06C, U+E06D, U+E074, U+E075), and semi-pitched percussion clefs (U+E078, U+E079), plus a bridge clef (U+E085).
- Removed "tall" versions of 6- and 4-string tab clefs, and instead made them recommended stylistic alternates, together with versions that use letterforms with serifs.
- Added +, -, X (multiply), comma, parentheses glyphs for time signatures (U+E09C–U+E0A6), plus basic fractions (U+E0A7–U+E0AB), and Penderecki-style open time signature (U+E0AD).
- Added specific noteheads for double whole note (U+E100) and whole note (U+E101) to the noteheads range rather than relying on the glyphs in the pre-composed notes range.
- Added shaped noteheads for specific note values (double whole note, whole note, half note, and quarter note and shorter); also added large up- and down-pointing triangles for highest/lowest notes played by an instrument (U+E102–U+E109).

- Added large slashed circular noteheads (U+E136–U+E139) as used by Stockhausen for notating gong/tam-tam hits.
- Added combining glyphs for note clusters of specific note values (U+E154–U+E171).
- Added noteheads with solfège and chromatic note names embedded within them, as seen in "EZ-Play" educational scores (U+E180–U+E1D9).
- Added specific range of noteheads for sacred harp shape note singing (U+E1E0–U+E1EF).
- Added pre-composed 1024th notes (U+E214–U+E215), tails (U+E28E–U+E28F) and rest (U+E52C).
- Added range for typing simple beamed groups of notes in text-based applications, (U+E220–U+E233). Designed to be used in conjunction with pre-composed notes (U+E200–U+E216), and allowing beamed groups with rhythmic values between 8th notes and 64th notes, plus ties and triplets.
- Added combining stems for multiphonics, damp, sussurando, Saunders vibrato pulse accent (U+E248–U+E24D).
- Added four- and five-stroke tremolos (U+E263–U+E264, U+E268–U+E269) plus Wieniawski-style unmeasured tremolo glyphs (U+E26C–U+26D).
- Added stylistic alternates for flags (U+E280–U+E28F): straight flags; and shorter stem-up flags to avoid collisions with augmentation dots.
- Separated accidentals into several discrete ranges based around the various accidental systems, including 12-EDO, 24-EDO, the system of up- and down-pointing arrows favoured by Gould, Stein-Zimmermann (also known as Tartini-Couper), Sims (also known as Maneri-Sims, due to the adoption of Ezra Sims' accidentals by Joe Maneri of the Boston Microtonal Society), Ben Johnston, Marc Sabat and Wolfgang von Schweinitz's Extended Helmholtz-Ellis Just Intonation Pitch Notation.
- Added George Secor and Dave Keenan's Sagittal system of accidentals (U+E360–U+E47F).
- Added accidentals used in Turkish folk music (U+E4C8–U+E4CF).
- Added Persian accidentals (U+E4D0–U+E4D1).
- Added staccatissimo wedge (U+E4E5–U+E4E6) and stroke (U+E4E7–U+E4E8) glyphs.
- Added very short (U+E502–U+E503) and very long (U+E508–U+E509) fermatas, plus short caesura (U+E50D).
- Added left and right halves of multirest H-bars (U+E52E–U+E52F) and old-style quarter rest as seen in e.g. Novello editions (U+E530).

- Added *ventiduesima* (three octaves, "22") glyphs to octaves range (U+E557–U+E559).
- Added precomposed glyphs for common dynamics (U+E567–U+E57B) and *niente* circle for hairpins (U+E57E).
- Added schleifer (long mordent, U+E5AA) and Haydn ornament (U+E5D1).
- Added additional brass techniques, including short, medium and long versions of lift, doit, lip fall, smooth fall, rough fall, plus jazz turn (U+E5E0–U+E5FB).
- Added range of glyphs for embouchure tightness (U+E61B–U+E623), reed position (U+E624–U+E626), multiphonics (U+E627–U+E629), and stylistic alternates for double- and triple-tonguing with no slurs.
- Added further overpressure glyphs (U+E64B–U+E64D), plus *jété*, *fouetté*, Rebecca Saunders's "vibrato pulse" accent, thumb position and indeterminate bow direction (U+E64E–U+E653) to string techniques range.
- Added plectrum pictogram (U+E669) and combining damp glyph for note stems (U+E66A) to plucked techniques range.
- Added arrows for breathing and intonation, plus combining *sussurando* glyph for note stems (U+E687–U+E68B), to vocal techniques range.
- Added pedal pictograms, *sostenuto* pedal symbols, and half-pedal marks (U+E6A5–U+E6AC) to keyboard techniques range.
- Added pictograms for metal rod (U+E6CF) and tuning key (U+E6D0) to harp techniques range.
- Added Smith Brindle's pictograms for tuned percussion instruments (U+E6E5–U+E6E8).
- Added pictogram for Indian table (U+E720), plus stylistic alternate for tambourine (U+E718) as used by Stockhausen.
- Added pictogram for football rattle (U+E735), plus Smith Brindle's pictogram for castanets (U+E738) as a stylistic alternate.
- Added pictogram for handbell (U+E765), plus stylistic alternates for cow bell (from Berio) and sleigh bell (from Smith Brindle).
- Added pictogram for Chinese cymbal (U+E776).
- Added pictogram for tam-tam with beater from Smith Brindle (U+E791).
- Added pictogram for maracas (U+E7A2), rainstick (U+E7A7), plus stylistic alternate for maraca from Smith Brindle (U+E7A1).
- Added pictogram for megaphone (U+E7B9).
- Added soft and hard glockenspiel beaters (U+E7F0–U+E7F7), superball beaters (U+E81C–U+E81F), wound beaters with hard and soft cores (U+E821–U+E828), plus soft, medium and hard gum beaters (U+E829–U+E834).
- Added pluck lift (U+E887) to handbells range.

- Added "Theme" indicators to analytics range (U+E8E4–U+E8E9).
- Added minor (minus sign) glyph (U+E904) to chord symbols range.
- Added mensural proportion glyphs (U+E9DB–U+E9DF).
- Added combining raise and lower glyphs (U+EA2C–U+EA2D) to figured bass range.
- Added repetition, angle brackets, and prefix + and ring glyphs to Function theorys range (U+EA63–U+EA68).
- Added new range for multi-segment lines, including moving all of the various "wiggle" glyphs (for trill, glissando, arpeggiando, vibrato, etc.) plus the 11 ornament strokes from the Unicode Musical Symbols range into this range, and adding further glyphs for variable speed trills, alternate arpeggiato ending glyphs, wavy lines, squaretooth and sawtooth lines, group glissando, circular motion, and variable speed and intensity of vibrato (U+EA80–U+EAD0).
- Added new range of pictograms for electronic music, including microphone, loudspeaker, transport controls, volume level and MIDI controller level (U+EAE0–U+EAF5).
- Added new "do not copy" glyphs (U+EB02–U+EB03), eyeglasses (U+EB04) and choral divide arrows (U+EB05–U+EB07) glyphs to the miscellaneous symbols range.
- Adjusted the registration of many glyphs (e.g. noteheads, accidentals, time signatures, flags, rests) in Bravura in line with the interim guidelines for metrics and registration for SMuFL-compliant fonts intended for use with scoring applications.

Version 0.6 (2013-07-29):

- Added opening parenthesis and closing parenthesis for noteheads (U+E10A–U+E10B), circled slash notehead, heavy X and heavy X with hat noteheads, as used in Dante Agostini's drum method (U+E10C–U+E10E).
- Added muted slash noteheads (U+E125–U+E127).
- Added "si" note name noteheads for French solfège (U+E187, U+E18F, U+E197), and H sharp note name noteheads for German (U+E1AE, U+E1C5, U+E1DC).
- Added combining rim shot stem (U+E24E).
- Added "sharp sharp" accidental for compatibility with MusicXML (U+E2A9).
- Added extended Stein-Zimmermann accidentals with arrows (U+E2F8–U+E304).
- Added one-third-tone sharp and two-third-tones sharp accidentals as used by Xenakis (U+E4B0–U+E4B1).
- Significant revision to the ornaments range, including splitting into separate ranges (common ornaments, other baroque ornaments, combining strokes for trills/mordents, precomposed trills/mordents). A small number of glyphs from previous versions of SMuFL have been removed to make way for symbols drawn from Frederick Neumann's authoritative book on baroque ornamentation.
- Added thumb pizzicato (U+E654).

- Added recommended stylistic alternates for Bartok pizzicato above/below (U+E660–U+E661).
- Added recommended stylistic alternates for 'Ped.' (U+E6A0) and 'Sost.' (U+E6A5) that do not include terminal dots.
- Added choke cymbal glyph (U+E875) from Weinberg.
- Added open, half-open and closed wah/volume pedals, left- and right-hand tapping glyphs for guitar (U+E8AD–U+E8B1).
- Added new range for arrows and arrowheads (U+EB00–U+EB1F), including moving the up/down/right/left arrows from the vocal techniques range (previously U+E687–U+E68A) into this new range.

Version 0.7-draft (2013-10-28):

- Revised guidelines for glyph registration, with changes for precomposed stems and stem decorations (which should now be centered around x=0) and flags (which should be positioned vertically relative to the end of a stem of normal length at y=0).
- Added specification for JSON metadata files for SMuFL and for SMuFL-compliant fonts, developed in conjunction with Joe Berkovitz.

Contents

About SMuFL

A brief history of music fonts

Computer software has been displaying musical symbols of various kinds since the 1960s, but the first font for musical symbols did not arrive until 1985, when Cleo Huggins designed Sonata for Adobe.[1]

Sonata mapped the musical symbols onto keys on the standard QWERTY keyboard, using some simple mnemonics (the treble G clef, for example, was mapped onto the **&** key, and the sharp sign onto **#**). Most music fonts developed since then, including Steve Peha's Petrucci (the first music font for Finale, dating from 1988[2]) and Jonathan Finn's Opus (the first music font for Sibelius, dating from 1993), have followed Sonata's layout.

However, since Sonata includes fewer than 200 glyphs, and even conventional music notation[3] requires many more symbols than that, individual vendors have devised their own mappings for glyphs beyond Sonata's initial set.

By 2013, for example, the Opus font family that is still Sibelius's default font set contains no fewer than 18 fonts with more than 600 glyphs between them.

In 1998, Perry Roland of the University of Virginia drafted a proposal for a new range of musical symbols to be incorporated into the Unicode Standard[4]. This range of 220 glyphs was duly accepted into the Unicode Standard, and those symbols are found at code points U+1D100–U+1D1FF[5]. However, its repertoire of 220 symbols does not extend dramatically beyond the scope of the original 1985 version of Sonata, though it does add symbols for mensural and Gregorian notation.

To date the only commercially available music font that uses the Unicode mapping is Adobe Sonata Std, and its repertoire is incomplete.

How SMuFL is organized

The aim of the Standard Music Font Layout (SMuFL) is to provide the basis for music font mapping for the age of Unicode and OpenType fonts.

SMuFL uses the standard Private Use Area in the Basic Multilingual Plane (starting at code point U+E000), and currently includes nearly 1800 glyphs, plus just over 100 optional but recommended glyphs, primarily ligatures (i.e. two or more symbols drawn as a single glyph) and stylistic alternates (i.e. a different appearance for the same glyph

[1] See http://www.identifont.com/show?12A
[2] See http://blog.finalemusic.com/post/2010/02/18/Meet-Steve-Peha-creator-of-Petrucci-Finales-first-music-font.aspx
[3] A term coined by Donald Byrd, Senior Scientist and Adjunct Associate Professor of Informatics at Indiana University.
[4] See http://www.lib.virginia.edu/artsandmedia/dmmc/Music/UnicodeMusic/
[5] See http://www.unicode.org/charts/PDF/U1D100.pdf

with equivalent meaning). SMuFL is a superset of the Unicode Musical Symbols range, and it is recommended that common glyphs are included both at code points in SMuFL and in the Unicode Musical Symbols range. In the tables of glyphs in this document, where glyphs are shared between SMuFL and the Unicode Musical Symbols range, the Unicode Musical Symbols code point is shown below the glyph description.

The groupings of glyphs within SMuFL are based on the groupings defined by Perry Roland in the Unicode Musical Symbols range, but with finer granularity. There are currently 89 groups of glyphs, proceeding roughly in order from least to most idiomatic, i.e. specific to particular instruments, types of music, or historical periods. The grouping has no significance other than acting as an attempt to provide an overview of the included glyphs.

Room for future expansion has been left in each group, with a minimum of 8 unused code points between groups where practical. Where a group already contains a larger number of glyphs, more room for future expansion has been left.

Mandatory and optional glyphs

One of the aims of SMuFL is to make it as simple as possible for developers both of fonts and of scoring software to implement support for a wide range of musical symbols. Although modern font technologies such as OpenType enable a great deal of sophistication in automatic substitution features[6], applications that wish to use SMuFL-compliant fonts are not obliged to support advanced OpenType features.

The basic requirements for the use of SMuFL-compliant fonts are the ability to access glyphs by their Unicode code point, to measure glyphs, and to scale them (e.g. by drawing the font at different point sizes). If applications are able to access OpenType features such as stylistic sets and ligatures, then additional functionality may be enabled.

However, all glyphs that can be accessed via OpenType features are also accessible via an explicit code point. For example, a stylistic alternate for the sharp accidental designed to have a clearer appearance when reproduced at a small size can be accessed as a stylistic alternate for U+E2A2, but also by way of its explicit code point, which will be in the range U+F400–U+F8FF (in Bravura, for example, this alternate glyph is encoded at U+F412).

Because optional glyphs for ligatures, stylistic alternates, etc. are not required, and different font developers may choose to provide different sets (e.g. several different appearances of tab clefs, or different sets of glyphs whose designs are optimized for

[6] See http://www.adobe.com/devnet/opentype/afdko/topic_feature_file_syntax.html

drawing at different optical sizes), SMuFL does not make any specific recommendations for how these glyphs should be assigned explicit code points, except that they must be within the range U+F400–U+F8FF, which is reserved for this purpose and for any other private use required by font or application developers.

In summary, mandatory glyphs (i.e. the base set that a font should contain if it is to be SMuFL-compliant) are encoded from U+E000, with a nominal upper limit of U+F3FF (a total of 5120 possible glyphs), while optional glyphs (ligatures, stylistic alternates, etc.) are encoded from U+F400, with a nominal upper limit of U+F8FF (a total of 1280 possible glyphs).

Implementations

To date the only available implementation of SMuFL is in Bravura, an OpenType font released under the SIL Open Font License that can be downloaded from the SMuFL web site at http://www.smufl.org/fonts.

The example glyphs in this document are all taken from Bravura.

Sources for symbols

In addition to surveying the music fonts supplied with Sibelius, Finale and other scoring applications, the following texts were consulted as sources for musical symbols:

- Agostini, Dante. *Methode de Batterie*. France: Carisch Musicom, 2009.
- Balestrieri, Donald. *Registers of the Standard Stradella Keyboard*. USA: Accord Magazine, 1979.[7]
- Doty, David B. *The Just Intonation Primer*. San Francisco, USA: The Just Intonation Network, 1993.
- Draugsvoll, Geir & Højsgaard, Erik (translated Borregaard, Andreas). *Handbook on Accordion Notation*. Copenhagen: The Royal Danish Academy of Music in Copenhagen, 2001.[8]
- Drobner, Mieczysław. *Instrumentoznawstwo i akustyka* (Musical Instruments and Acoustics). Cracow: PWM Edition, 1960 (7th Edition, 2008).
- Gould, Elaine. *Behind Bars*. London: Faber Music, 2011.
- Inglefield, Ruth & Neill, Lou Anne. *Writing for the Pedal Harp: Standardized Manual for Composers and Harpists*. University of California Press, 1985.

[7] See http://www.accordions.com/articles/stradella.aspx
[8] See http://www.rednoteensemble.com/Calls_for_Scores_files/Handbook%20on%20Accordion%20Notation.pdf

- McCarty, Frank. *Notational Standards for Percussion: A Report on the Ghent Conference* (from *The Instrumentalist, xxix*). Northfield, IL: The Instrumentalist Publishing Co., 1975.
- Neumann, Frederick. *Ornamentation in Baroque and Post-Baroque Music*. Princeton, NJ: Princeton University Press, 1978.
- Read, Gardner. *Twentieth-Century Microtonal Notation*. USA: Praeger, 1990.
- Roland, Perry. *Proposal for Encoding Western Music Symbols in ISO/IEC 10646*. Virginia: University of Virginia, 1998.
- Sabat, Marc. *The Extended Helmholtz-Ellis JI Pitch Notation*. Plainsound Music Edition, 2005.
- Salzedo, Carlos. *Modern Study of the Harp*. London: G. Schirmer, 1921.
- Secor, George & Keenan, David. *Sagittal – A Microtonal Notation System*. Xenharmonikôn, An Informal Journal of Experimental Music, Volume 18, 2006. www.sagittal.org, 2004.
- Smith Brindle, Reginald. *Contemporary Percussion*. New York: Oxford University Press, 1991.
- Stone, Kurt. *Music Notation in the Twentieth Century: A Practical Guidebook*. New York: W.W. Norton, 1980.
- Weinberg, Norman. *Guide to Standardized Drumset Notation*. Lawton: Percussive Arts Society, Inc., 1998.
- "Ornaments", Grove Music Online, ed. L. Macy (accessed January 24 2013)
- *AGEHR Handbell and Handchime Notation Booklet, 8th ed.* Dayton: Lorenz, 2010.[9]

Other contributors

Grateful thanks are also extended to the following, all of whom have contributed their time and expertise to identifying further sources of glyphs for inclusion in SMuFL: Mark Adler, Stephen Begley, Michael Good, Mark Johnson, Dave Keenan, Alexander Plötz, Ahmed Tahar, Emil Wojtacki, Werner Wolff.

Thanks also to Joe Berkovitz for his contribution towards the guidelines for font metrics and glyph registration for fonts intended for use with scoring applications, and the design of the font metadata JSON files.

[9] A summary of the main notations prescribed in this book can be found at http://www.handbellworld.com/music/HandbellNotation.cfm

Missing symbols?

If you know of any commonly used symbols that are not included in SMuFL, please post your suggestions to the **smufl-discuss** mailing list (see www.smufl.org/discuss).

License

SMuFL is free to use, and is licensed under the terms of the MIT License, as follows:

Notes for implementers

This section provides guidelines and recommendations for metrics, glyph registration and font metadata, and is intended for font designers who want to design SMuFL-compliant fonts, and for software developers who want to build applications that can consume SMuFL-compliant fonts.

Glyph and class names

Software developers may find it convenient to refer to specific glyphs within SMuFL by name rather than by Unicode code point. Likewise, there are certain classes of glyphs that should be handled in a similar way in software applications (e.g. noteheads, clefs, flags, etc.).

To aid software developers in implementing SMuFL-compliant fonts, two support files in JSON format are available, one providing a mapping between code point and glyph name, and the other providing a list of similar glyphs grouped into classes.

For more information about the JSON format, see www.json.org.

glyphnames.json is the file that maps code points to glyph names, which by convention use lower camel case, a convenient format for most programming languages. Here is an excerpt of this file:

```
{
    ...
    "barlineDashed": {
        "alternateCodepoint": "U+1D104",
        "codepoint": "U+E036"
    },
    "barlineDotted": {
        "codepoint": "U+E037"
    },
    "barlineDouble": {
        "alternateCodepoint": "U+1D101",
        "codepoint": "U+E031"
    },
    "barlineFinal": {
        "alternateCodepoint": "U+1D102",
        "codepoint": "U+E032"
    },
    "barlineHeavy": {
        "codepoint": "U+E034"
    },
    ...
}
```

The file is keyed using the glyph names, with the SMuFL code point provided as the value for the "codepoint" key, and the Unicode Musical Symbols range code point (if applicable) provided as the value for the "alternateCodepoint" key.

classes.json is the file that groups glyphs together into classes, so that software developers can handle similar glyphs in a similar fashion. Here is an excerpt of this file:

```
{
    "clefs": [
          "gClef",
          "gClef15mb",
          "gClef8vb",
          "gClef8va",
          "gClef15ma",
          "gClef8vbOld",
          "gClef8vbCclef",
          ...
    ],
    "noteheads": [
          "noteheadDoubleWhole",
          "noteheadWhole",
          "noteheadHalf",
          "noteheadBlack",
          "noteheadNull",
          ...
    ],
    "flags": [
          "flag8thUp",
          "flag8thDown",
          "flag16thUp",
          "flag16thDown",
          "flag32ndUp",
          "flag32ndDown",
          ...
    ],
    ...
}
```

Glyphs are listed within their classes using the names specified in **glyphnames.json**. Not all glyphs are contained within classes, and the same glyph can theoretically appear in multiple classes (though, as of the current version, none do).

The current versions of **glyphnames.json** and **classes.json** are available for download at www.smufl.org/download.

In addition to the glyph names and classes JSON files, it is recommended that SMuFL-compliant fonts also contain font-specific metadata JSON files, which are described below.

Designing for scoring applications and text-based applications

In addition to providing a standard approach to how musical symbols should be assigned to Unicode code points, SMuFL also aims to provide two sets of guidelines for the metrics and glyph registration, addressing the two most common use cases for fonts that contain musical symbols, i.e. use within dedicated scoring applications, and use within text-based applications (such as a word processors, desktop publishers, web pages, etc.).

Since it is helpful for scoring applications that all symbols in a font be scaled relative to each other as if drawn on a staff of a particular size, and conversely it is helpful for musical symbols to be drawn in-line with text to be scaled relative to the letterforms with which the musical symbols are paired, in general a single font cannot address these two use cases: the required metrics and relative scaling of glyphs are incompatible[10].

Therefore, it is recommended that font developers make clear whether a given font is intended for use by scoring applications or by text-based applications by appending "Text" to the name of the font intended for text-based applications; for example, "Bravura" is intended for use by scoring applications, and "Bravura Text" is intended for use by text-based applications (or indeed for mixing musical symbols with free text within a scoring application).

Metrics and glyph registration for scoring applications

The following guidelines are provided for fonts intended for use in scoring applications:

- Dividing the em in four provides an analogue for a five-line staff: if a font uses 1000 upm (design units per em), as is conventional for a PostScript font, one staff space is equal to 250 design units; if a font uses 2048 upm, as is conventional for a TrueType font, one staff space is equal to 512 design units.
- The origin (bottom left corner of the em square, i.e. x = 0 and y = 0 in font design space) therefore represents the middle of the bottom staff line of a nominal five-line staff, and y = 1 em represents the middle of the top staff line of that same five-line staff.

[10] The main problem concerns line spacing: because most applications determine the line spacing required for a font based on a sum of the ascender, descender and line gap values in the font (for which different applications on different operating systems use different combinations of the three places this can be defined, once the **hhea** table and twice in the **OS/2** table), it is impractical to provide a font where all glyphs are scaled correctly relatively to another in such a way that all musical symbols can be drawn at a single scale factor that complements text fonts at the same point size. Many applications clip glyphs that exceed the calculated line spacing, so in order to have a single font in which e.g. a G clef is drawn without clipping and an eighth note is drawn at a corresponding scale factor (such that the clef is around twice as tall as the note), the line spacing would have to be so tall that it would greatly distort the line spacing of the text. For more information about this issue, see http://typophile.com/node/13081. Bravura, for what it's worth, uses very large line spacing (1.75 times its em square), such that 99% of glyphs are drawn without clipping in text-based applications, at the expense of making it practical to use the font mixed in-line with text.

- All glyphs should be drawn at a scale consistent with the key measurement that one staff space = 0.25 em.
- Unless otherwise stated, all glyphs shall be horizontally registered so that their leftmost point coincides with x = 0.
- Unless otherwise stated, all glyphs shall have zero-width side bearings, i.e. no blank space to the left or right of the glyph.
- Glyphs that apply to a staff as a whole (e.g. barlines) shall be registered such that the font baseline lies at the nominal vertical position of the bottom line of a five-line staff. If the glyph is specific to a staff other than a regular five-line staff, then for registration purposes that staff's vertical center shall be exactly aligned with the vertical center of a five-line staff.
- Glyphs for movable notations that apply to some vertical staff position (e.g. note heads, accidentals) shall be registered such that the font baseline lies exactly at that position. For example, a typical notehead or accidental glyph is registered such that it is vertically centered on the baseline.
- Clefs should be positioned such that the pitch the clef refers to is on the baseline (e.g. the F clef is placed such that the upper dot is above and the lower dot below the baseline). If a clef does not refer specifically to a pitch, its y=0 should coincide with the center staff line.
- Noteheads should be positioned as if on the bottom line of the staff (except for complete clusters representing intervals of a second or third, which should be positioned as if in the bottom space of the staff).
- Pre-composed stems should be positioned as if they are pointing upwards and attached to a notehead on the bottom line of the staff. The center of the stem should be at x=0.
- Combining glyphs that are designed to be superimposed on stems (stem decorations) should be registered such that the point that should sit in the center of the stem (i.e. typically the visual center of the symbol) should be at x=0 and y=0.
- Accidentals should be positioned as if they apply to a notehead on the bottom line of the staff.
- Pre-composed notes should be positioned as if on the bottom line of the staff.
- Flags are positioned such that y=0 corresponds to the end of a stem of normal length, and such that x=0 corresponds to the left-hand side of the stem.

- Rests are relative to an imaginary staff position, typographically speaking (usually the center line of a five-line staff in which the rest assumes its default position). The font baseline should represent this staff position, with the exception of the whole note (semibreve) rest, which should hang from the font baseline.
- Letters for dynamics (and for D.C./D.S. in the repeats range) should be scaled such that the caps height is around 0.75 em, and the x-height is around 0.5 em.
- Digits for time signatures should be scaled such that each digit is two staff spaces tall, i.e. 0.5 em, and vertically centered on the baseline. Although some glyphs in the time signatures range (such as the large + sign, common and cut time glyphs, etc.) apply to the whole staff, these should likewise be vertically centered on the baseline.

Many of these guidelines are based on the conventions established by Adobe's Sonata font and carried through by most other fonts designed for use in scoring applications, for the sake of making it as easy as possible for font and application developers to transition their existing fonts and software to supporting SMuFL-compliant fonts.

Metadata for SMuFL-compliant fonts

To help software developers integrate SMuFL-compliant fonts, it is recommended that font designers provide a font-specific metadata file, in JSON format, in the distribution package for their fonts.

The metadata file allows the designer to provide information that cannot easily (or in some cases at all) be encoded within or retrieved from the font software itself, including recommendations for how to draw the elements of music notation not provided directly by the font itself (such as staff lines, barlines, hairpins, etc.) in a manner complementary to the design of the font, and important glyph-specific metrics, such as the precise coordinates at which a stem should connect to a notehead.

Glyph names may be supplied either using their Unicode code point or their canonical glyph name (as defined in the **glyphnames.json** file – see above). Measurements are specified in staff spaces, using floating point numbers to any desired level of precision.

The following key/value pairs are mandatory:

Key name	*Description*
"fontName"	The name of the font to which the metadata applies
"fontVersion"	The version number of the font to which the metadata applies

All other key/value pairs are optional. The "engravingDefaults" structure contains key/value pairs defining recommended defaults for line widths etc., as follows, with all measurements expressed in staff spaces:

Key name	*Description*
"staffLineThickness"	The thickness of each staff line
"stemThickness"	The thickness of a stem
"beamThickness"	The thickness of a beam
"beamSpacing"	The distance between the primary and subsequent secondary beams
"legerLineThickness"	The thickness of a leger line (normally somewhat thicker than a staff line)
"legerLineExtension"	The amount by which a leger line should extend either side of a notehead
"slurEndpointThickness"	The thickness of the end of a slur
"slurMidpointThickness"	The thickness of the mid-point of a slur (i.e. its thickest point)
"tieEndpointThickness"	The thickness of the end of a tie
"tieMidpointThickness"	The thickness of the mid-point of a tie
"thinBarlineThickness"	The thickness of a thin barline, e.g. a normal barline, or each of the lines of a double barline
"thickBarlineThickness"	The thickness of a thick barline, e.g. in a final barline or a repeat barline
"dashedBarlineThickness"	The thickness of a dashed barline
"dashedBarlineDashLength"	The length of the dashes to be used in a dashed barline
"dashedBarlineGapLength"	The length of the gap between dashes in a dashed barline
"barlineSeparation"	The default distance between multiple barlines when locked together, e.g. between two thin barlines making a double barline, or a thin and a thick barline making a final barline
"bracketThickness"	The thickness of the vertical line of a bracket grouping staves together
"subBracketThickness"	The thickness of the vertical line of a sub-bracket grouping staves belonging to the same instrument together
"hairpinThickness"	The thickness of a *crescendo/diminuendo* hairpin
"octaveLineThickness"	The thickness of the dashed line used for an octave line
"pedalLineThickness"	The thickness of the line used for piano pedaling
"repeatEndingLineThickness"	The thickness of the brackets drawn to indicate repeat endings

Key name	*Description*
"arrowShaftThickness"	The thickness of the line used for the shaft of an arrow
"lyricLineThickness"	The thickness of the lyric extension line to indicate a melisma in vocal music
"textEnclosureThickness"	The thickness of a box drawn around text instructions (e.g. rehearsal marks)

The "glyphs" structure contains a structure for each glyph for which metadata is supplied, with the canonical glyph name or its Unicode code point as the key. Each glyph may define any of the following key/value pairs:

Key name	*Description*
"stemUpSE"	The exact position at which the bottom right-hand (south-east) corner of an upward-pointing stem rectangle should start, relative to the glyph origin, expressed as Cartesian coordinates in staff spaces.
"stemDownNW"	The exact position at which the top left-hand (north-west) corner of a downward-pointing stem rectangle should start, relative to the glyph origin, expressed as Cartesian coordinates in staff spaces.
"stemUpNW"	The amount by which an up-stem should be lengthened from its nominal unmodified length in order to ensure a good connection with a flag, in spaces.[11]
"stemDownSW"	The amount by which a down-stem should be lengthened from its nominal unmodified length in order to ensure a good connection with a flag, in spaces.
"nominalWidth"	The width in staff spaces of a given glyph that should be used for e.g. positioning leger lines correctly.[12]

[11] It is typical for noteheads and flags to be drawn using font glyphs, while stems themselves are drawn using primitive lines or rectangles. Flag glyphs in SMuFL-compliant fonts are registered such that y=0 represents the end of a stem drawn at its normal length, i.e. typically 3.5 staff spaces, so for simple drawing, any flag can be drawn at the same position relative to the stem and give the correct visual stem length. Modern drawing APIs typically provide sub-pixel RGB anti-aliasing for font glyphs, but may only provide grayscale anti-aliasing for primitive shapes. If the stem is drawn at its normal length with a flag glyph continuing beyond the end of the stem, there may be a poor visual appearance resulting from the primitive stem using standard anti-aliasing and the flag glyph using sub-pixel anti-aliasing. Therefore, it is recommended to extend the stem by the additional height of the flag such that the primitive stem stops at the end (or just short of the end) of the flag. Because the amount by which the stem should be extended is highly dependent on the design of the flag in a particular font, this value should be specified for each flag glyph in the metadata JSON file.

[12] Certain fonts, for example those that mimic music calligraphy, may include glyphs that are asymmetric by design, and where a simple calculation of the glyph's bounding box will not provide the correct result for registering that glyph with other primitives. For example, a whole rest may be slightly oblique if mimicking a chisel nib pen, and for precise registration it may be necessary to specify its width independent of the glyph's actual bounding box.

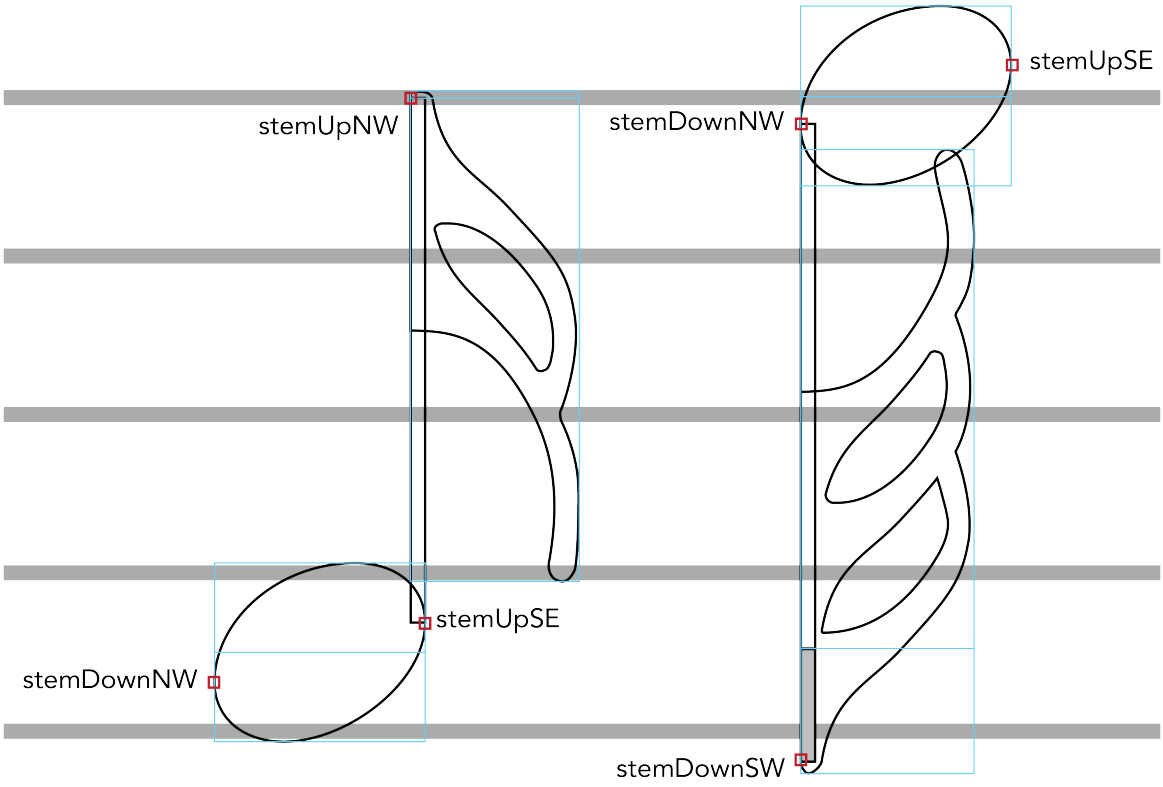
Below is an excerpt of a dummy font metadata file for the Bravura font, with some of the "engravingDefaults" and "glyphs" structures filled in:

```
{
    "fontName" : "Bravura",
    "fontVersion": 0.3,

    "engravingDefaults": {
          "staffLineThickness": 0.1,
          "stemThickness": 0.1,
          "beamThickness": 0.5,
          "beamSpacing": 0.25,
          "legerLineThickness": 0.2,
          "legerLineExtension": 0.2,
          ...
    },

    "glyphs": {
          "noteheadBlack": {
                "stemDownNW": [
                      0.0,
                      -0.184
                ],
                "stemUpSE": [
                      1.328,
                      0.184
                ]
          },
            ...
    },
}
```

Example of glyph registration for notes with flags

The figure below shows how font-specific metadata may be used in conjunction with the conventions of glyph registration to construct two notes: an up-stem 16th note (semiquaver), and a down-stem 32nd (demisemiquaver).

- The horizontal grey lines denote staff lines, for scale.
- The light blue boxes show glyph bounding boxes, with the left-hand side of the box corresponding to x=0, while the horizontal lines bisecting the blue boxes show the origin for each glyph, i.e. y=0.
- The red boxes show the locations of the glyph attachment points, as specified in the font metadata JSON file.
- The shaded area on the down-stem note shows the amount by which a stem of standard length (i.e. the unfilled portion of the stem) should be extended in order to ensure good on-screen appearance at all zoom levels.



Note that the **stemUpSE** attachment point corresponds to the bottom right-hand (or south-east) corner of the stem, while **stemDownNW** corresponds to the top left-hand (or north-west) corner of the stem. Likewise, for correct alignment, the flag glyphs must always be aligned precisely to the left-hand side of the stem, with the glyph origin positioned vertically at the end of the normal stem length.

Metrics and glyph registration for text-based applications

Work on these guidelines for metrics and glyph registration is ongoing.

Staff brackets (U+E000–U+E01F)

U+E000 (and U+1D114)
brace
Brace

U+E001
reversedBrace
Reversed brace

U+E002 (and U+1D115)
bracket
Bracket

U+E003
bracketTop
Bracket top

U+E004
bracketBottom
Bracket bottom

U+E005
reversedBracketTop
Reversed bracket top

U+E006
reversedBracketBottom
Reversed bracket bottom

U+E007
systemDivider
System divider

U+E008
systemDividerLong
Long system divider

U+E009
systemDividerExtraLong
Extra long system divider

Implementation notes

The brace glyph (U+E000) should be scaled vertically in a scoring application to the appropriate height of the two or more staves it encompasses.

U+E002 (i.e. U+1D115) is a complete bracket of a fixed height useful for displaying brackets in text-based documents or applications.

To display a bracket of variable height in a scoring application, use U+E003 and U+E004 as the top and bottom terminals of a bracket drawn using a stroked line or filled rectangle of the appropriate width.

Staves (U+E020–U+E02F)

U+E020 (and U+1D116)
staff1Line
1-line staff

U+E021 (and U+1D117)
staff2Lines
2-line staff

U+E022 (and U+1D118)
staff3Lines
3-line staff

U+E023 (and U+1D119)
staff4Lines
4-line staff

U+E024 (and U+1D11A)
staff5Lines
5-line staff

U+E025 (and U+1D11B)
staff6Lines
6-line staff

Implementation notes

Scoring programs should draw their own staff lines using primitives, not use the glyphs in this range.

Barlines (U+E030–U+E03F)

U+E030 (and U+1D100)
barlineSingle
Single barline

U+E031 (and U+1D101)
barlineDouble
Double barline

U+E032 (and U+1D102)
barlineFinal
Final barline

U+E033 (and U+1D103)
barlineReverseFinal
Reverse final barline

U+E034
barlineHeavy
Heavy barline

U+E035
barlineHeavyHeavy
Heavy double barline

U+E036 (and U+1D104)
barlineDashed
Dashed barline

U+E037
barlineDotted
Dotted barline

U+E038 (and U+1D105)
barlineShort
Short barline

U+E039
barlineTick
Tick barline

Implementation notes

Scoring programs should draw their own barlines using primitives, not use the glyphs in this range.

Repeats (U+E040–U+E05F)

U+E040 (and U+1D106)
leftRepeat
Left repeat sign

U+E041 (and U+1D107)
rightRepeat
Right repeat sign

U+E042 (and U+1D108)
repeatDots
Repeat dots

U+E043 (and U+1D109)
dalSegno
Dal segno

U+E044 (and U+1D10A)
daCapo
Da capo

U+E045 (and U+1D10B)
segno
Segno

U+E046 (and U+1D10C)
coda
Coda

U+E047
codaSquare
Square coda

U+E048
segnoSerpent1
Short barline

U+E049
segnoSerpent2
Tick barline

U+E04A
leftRepeatSmall
Left repeat sign within bar

U+E04B
rightRepeatSmall
Right repeat sign within bar

Recommended stylistic alternates

U+E045
segnoJapanese
Segno (Japanese style, rotated)

U+E046
codaJapanese
Coda (Japanese style, serif)

Implementation notes

Scoring programs should draw their own repeat barlines using primitives to draw the thick and thin lines and U+E042 to draw the dots, not use the precomposed glyphs U+E040 or U+E041.

U+E043 and U+E044 are provided for compatibility with the Unicode Musical Symbols range. Scoring applications should allow the user to specify the appearance of the *da capo* and *dal segno* instructions using any regular text font.

Clefs (U+E060–U+E08F)

U+E060 (and U+1D11E)
gClef
G clef

U+E061
gClef15mb
G clef quindicesima bassa

U+E062 (and U+1D120)
gClef8vb
G clef ottava bassa

U+E063 (and U+1D11F)
gClef8va
G clef ottava alta

U+E064
gClef15ma
G clef quindicesima alta

U+E065
gClef8vbOld
G clef ottava bassa (old style)

U+E066
gClef8vbClef
G clef ottava bassa with C clef

U+E067
gClefLigatedNumberBelow
Combining G clef, number below

U+E068
gClefLigatedNumberAbove
Combining G clef, number above

U+E069
gClefArrowUp
G clef, arrow up

U+E06A
gClefArrowDown
G clef, arrow down

U+E06B (and U+1D121)
cClef
C clef

U+E06C
cClefArrowUp
C clef, arrow up

U+E06D
cClefArrowDown
C clef, arrow down

U+E06E
cClefCombining
Combining C clef

U+E06F (and U+1D122)
fClef
F clef

U+E070
fClef15mb
F clef quindicesima bassa

U+E071 (and U+1D124)
fClef8vb
F clef ottava bassa

U+E072 (and U+1D123)
fClef8va
F clef ottava alta

U+E073
fClef15ma
F clef quindicesima alta

U+E074
fClefArrowUp
F clef, arrow up

U+E075
fClefArrowDown
F clef, arrow down

U+E076 (and U+1D125)
unpitchedPercussionClef1
Unpitched percussion clef 1

U+E077 (and U+1D126)
unpitchedPercussionClef2
Unpitched percussion clef 2

U+E078
semipitchedPercussionClef1
Semi-pitched percussion clef 1

U+E079
semipitchedPercussionClef2
Semi-pitched percussion clef 2

U+E07A
6stringTabClef
6-string tab clef

U+E07B
4stringTabClef
4-string tab clef

U+E07C
cClefTriangular
Triangular C clef

U+E07D
fClefTriangular
Triangular F clef

U+E07E
cClefTriangularToFClef
C clef to F clef change

U+E07F
fClefTriangularToCClef
F clef to C clef change

U+E080
gClefReversed
Reversed G clef

U+E081
gClefUpsideDown
Upside-down G clef

U+E082
cClefReversed
Reversed C clef

U+E083
fClefReversed
Reversed F clef

U+E084
fClefUpsideDown
Upside-down F clef

U+E085
bridgeClef
Bridge clef

Recommended stylistic alternates

U+E076
unpitchedPercussionClef1Alt
Unpitched percussion clef 1 (thick-thin)

U+E07A
6stringTabClefTall
6-string tab clef (tall)

U+E07A
6stringTabClefSerif
6-string tab clef (serif)

U+E07B
4stringTabClefTall
4-string tab clef (tall)

U+E07B
4stringTabClefSerif
4-string tab clef (serif)

Recommended ligatures

uniE067_uniE910
G clef, 0 below

uniE067_uniE2A0_uniE911
G clef, flat 1 below

uniE067_uniE2A0_uniE912
G clef, flat 2 below

uniE067_uniE2A1_uniE912
G clef, natural 2 below

uniE067_uniE912
G clef, 2 below

uniE067_uniE2A0_uniE913
G clef, flat 3 below

uniE067_uniE2A1_uniE913
G clef, natural 3 below

uniE067_uniE913
G clef, 3 below

uniE067_uniE2A0_uniE914
G clef, flat 4 below

uniE067_uniE914
G clef, 4 below

uniE067_uniE915

G clef, 5 below

uniE067_uniE2A2_uniE915

G clef, sharp 5 below

uniE067_uniE2A0_uniE916

G clef, flat 6 below

uniE067_uniE2A1_uniE916

G clef, natural 6 below

uniE067_uniE916

G clef, 6 below

uniE067_uniE2A0_uniE917

G clef, flat 7 below

uniE067_uniE917

G clef, 7 below

uniE067_uniE918

G clef, 8 below

uniE067_uniE2A0_uniE919

G clef, flat 9 below

uniE067_uniE2A1_uniE919

G clef, natural 9 below

uniE067_uniE919

G clef, 9 below

uniE067_uniE911_uniE910_uniE2A0

G clef, flat 10 below

uniE067_uniE911_uniE910_uniE2A1

G clef, natural 10 below

uniE067_uniE911_uniE910

G clef, 10 below

uniE067_uniE911_uniE911_uniE2A0

G clef, flat 11 below

uniE067_uniE911_uniE911

G clef, 11 below

uniE067_uniE911_uniE912

G clef, 12 below

uniE067_uniE911_uniE912_uniE2A2

G clef, sharp 12 below

uniE067_uniE911_uniE913_uniE2A0

G clef, flat 13 below

uniE067_uniE911_uniE913

G clef, 13 below

uniE067_uniE911_uniE914

G clef, 14 below

uniE067_uniE911_uniE915

G clef, 15 below

uniE067_uniE911_uniE916

G clef, 16 below

uniE067_uniE911_uniE917

G clef, 17 below

uniE068_uniE912_uniE2A0

G clef, flat 2 above

uniE068_uniE912

G clef, 2 above

uniE068_uniE913_uniE2A1

G clef, natural 3 above

uniE067_uniE911_uniE913_uniE2A1

G clef, natural 13 below

uniE067_uniE911_uniE914_uniE2A0

G clef, flat 14 below

uniE067_uniE911_uniE915_uniE2A0

G clef, flat 15 below

uniE067_uniE911_uniE916_uniE2A0

G clef, flat 16 below

uniE067_uniE911_uniE917_uniE2A1

G clef, natural 17 below

uniE068_uniE911_uniE2A2

G clef, sharp 1 above

uniE068_uniE912_uniE2A1

G clef, natural 2 above

uniE068_uniE913_uniE2A0

G clef, flat 3 above

uniE068_uniE913

G clef, 3 above

uniE068_uniE914
G clef, 4 above

uniE068_uniE914_uniE2A2
G clef, sharp 4 above

uniE068_uniE915_uniE2A0
G clef, flat 5 above

uniE068_uniE915
G clef, 5 above

uniE068_uniE916_uniE2A0
G clef, flat 6 above

uniE068_uniE916_uniE2A1
G clef, natural 6 above

uniE068_uniE916
G clef, 6 above

uniE068_uniE917_uniE2A0
G clef, flat 7 above

uniE068_uniE917_uniE2A1
G clef, natural 7 above

uniE068_uniE917
G clef, 7 above

uniE068_uniE918_uniE2A0
G clef, flat 8 above

uniE068_uniE919_uniE2A0
G clef, flat 9 above

uniE068_uniE919_uniE2A1
G clef, natural 9 above

uniE068_uniE919
G clef, 9 above

uniE06F_uniE915
F clef, 5 below

Implementation notes

Scoring applications may choose to create e.g. *ottava alta* and *ottava bassa* versions of the G clef and F clef by combining U+E060 and U+E06F with U+E550 (8) and U+E554 (15) rather than using the precomposed glyphs.

The basic G clef, F clef and C clef symbols can be positioned at different vertical positions relative to the staff as required (e.g. the C clef can be positioned to create an alto or tenor clef).

Time signatures (U+E090–U+E0AF)

U+E090

timeSig0

Time signature 0

U+E091

timeSig1

Time signature 1

U+E092

timeSig2

Time signature 2

U+E093

timeSig3

Time signature 3

U+E094

timeSig4

Time signature 4

U+E095

timeSig5

Time signature 5

U+E096

timeSig6

Time signature 6

U+E097

timeSig7

Time signature 7

U+E098

timeSig8

Time signature 8

U+E099

timeSig9

Time signature 9

U+E09A (and U+1D134)

timeSigCommon

Common time

U+E09B (and U+1D135)

timeSigCutCommon

Cut time

U+E09C

timeSigPlus

Time signature +

U+E09D

timeSigPlusSmall

Time signature + (for numerators)

U+E09E

timeSigFractionalSlash

Time signature fraction slash

U+E09F

timeSigEquals

Time signature equals

U+E0A0

timeSigMinus

Time signature minus

U+E0A1

timeSigMultiply

Time signature multiply

U+E0A2

timeSigParensLeftSmall

Left parenthesis for numerator only

U+E0A3

timeSigParensRightSmall

Right parenthesis for numerator only

U+E0A4

timeSigParensLeft

Left parenthesis for whole time signature

U+E0A5

timeSigParensRight

Right parenthesis for whole time signature

U+E0A6

timeSigComma

Time signature comma

U+E0A7

timeSigFractionQuarter

Time signature fraction ¼

U+E0A8

timeSigFractionHalf

Time signature fraction ½

U+E0A9

timeSigFractionThreeQuarters

Time signature fraction ¾

U+E0AA

timeSigFractionOneThird

Time signature fraction ⅓

U+E0AB

timeSigFractionTwoThirds

Time signature fraction ⅔

U+E0AC

timeSigX

Open time signature

U+E0AD

timeSigOpenPenderecki

Open time signature (Penderecki)

Noteheads (U+E0C0–U+E11F)

U+E0C0

noteheadDoubleWhole

Double whole notehead

U+E0C1

noteheadWhole

Whole notehead

U+E0C2 (and U+1D157)

noteheadHalf

Half notehead

U+E0C3 (and U+1D158)

noteheadBlack

Black notehead

U+E0C4 (and U+1D159)

noteheadNull

Null notehead

U+E0C5

noteheadXDoubleWhole

X notehead double whole

U+E0C6

noteheadXWhole

X notehead whole

U+E0C7

noteheadXHalf

X notehead half

U+E0C8 (and U+1D143)

noteheadXBlack

X notehead black

U+E0C9

noteheadXOrnate

Ornate X notehead

U+E0CA

noteheadPlusDoubleWhole

Plus notehead double whole

U+E0CB

noteheadPlusWhole

Plus notehead whole

U+E0CC

noteheadPlusHalf

Plus notehead half

U+E0CD (and U+1D144)

noteheadPlusBlack

Plus notehead black

U+E0CE

noteheadCircleXDoubleWhole

Circle X double whole

U+E0CF

noteheadCircleXWhole

Circle X whole

U+E0D0

noteheadCircleXHalf

Circle X half

U+E0D1 (and U+1D145)

noteheadCircleX

Circle X notehead

U+E0D2

noteheadDoubleWholeWithX

Double whole notehead with X

U+E0D3

noteheadWholeWithX

Whole notehead with X

U+E0D4

noteheadHalfWithX

Half notehead with X

U+E0D5

noteheadVoidWithX

Void notehead with X

U+E0D6 (and U+1D146)

noteheadSquareWhite

Square notehead white

U+E0D7 (and U+1D147)

noteheadSquareBlack

Square notehead black

U+E0D8

noteheadTriangleUpDoubleWhole

Triangle notehead up double whole

U+E0D9

noteheadTriangleUpWhole

Triangle notehead up whole

U+E0DA

noteheadTriangleUpHalf

Triangle notehead up half

U+E0DB (and U+1D148)

noteheadTriangleUpWhite

Triangle notehead up white

U+E0DC (and U+1D149)

noteheadTriangleUpBlack

Triangle notehead up black

U+E0DD (and U+1D14A)

noteheadTriangleLeftWhite

Triangle notehead left white

U+E0DE (and U+1D14B)

noteheadTriangleLeftBlack

Triangle notehead left black

U+E0DF (and U+1D14C)

noteheadTriangleRightWhite

Triangle notehead right white

U+E0E0 (and U+1D14D)

noteheadTriangleRightBlack

Triangle notehead right black

U+E0E1

noteheadTriangleDownDoubleWhole

Triangle notehead down double whole

U+E0E2

noteheadTriangleDownWhole

Triangle notehead down whole

U+E0E3

noteheadTriangleDownHalf

Triangle notehead down half

U+E0E4 (and U+1D14E)

noteheadTriangleDownWhite

Triangle notehead down white

U+E0E5 (and U+1D14F)

noteheadTriangleDownBlack

Triangle notehead down black

U+E0E6 (and U+1D150)

noteheadTriangleUpRightWhite

Triangle notehead up right white

U+E0E7 (and U+1D151)

noteheadTriangleUpRightBlack

Triangle notehead up right black

U+E0E8 (and U+1D152)

noteheadMoonWhite

Moon notehead white

U+E0E9 (and U+1D153)

noteheadMoonBlack

Moon notehead black

U+E0EA (and U+1D154)

noteheadTriangleRoundDownWhite

Triangle-round notehead down white

U+E0EB (and U+1D155)

noteheadTriangleRoundDownBlack

Triangle-round notehead down black

U+E0EC (and U+1D156)

noteheadParenthesis

Parenthesis notehead

U+E0ED

noteheadSlashedBlack1

Slashed black notehead (bottom left to top right)

U+E0EE

noteheadSlashedBlack2

Slashed black notehead (top left to bottom right)

U+E0EF

noteheadSlashedHalf1

Slashed half notehead (bottom left to top right)

U+E0F0

noteheadSlashedHalf2

Slashed half notehead (top left to bottom right)

U+E0F1

noteheadSlashedWhole1

Slashed whole notehead (bottom left to top right)

U+E0F2

noteheadSlashedWhole2

Slashed whole notehead (top left to bottom right)

U+E0F3

noteheadSlashedDoubleWhole1

Slashed double whole notehead (bottom left to top right)

U+E0F4

noteheadSlashedDoubleWhole2

Slashed double whole notehead (top left to bottom right)

U+E0F5

noteheadDiamondDoubleWhole

Diamond double whole notehead

U+E0F6

noteheadDiamondWhole

Diamond whole notehead

U+E0F7

noteheadDiamondHalf

Diamond half notehead

U+E0F8

noteheadDiamondBlack

Diamond black notehead

U+E0F9

noteheadDiamondDoubleWholeOld

Diamond double whole notehead (old)

U+E0FA

noteheadDiamondWholeOld

Diamond whole notehead (old)

U+E0FB

noteheadDiamondHalfOld

White diamond notehead

U+E0FC

noteheadDiamondBlackOld

Black diamond notehead

U+E0FD

noteheadDiamondHalfFilled

Half-filled diamond notehead

U+E0FE

noteheadCircledBlack

Circled black notehead

U+E0FF

noteheadCircledHalf

Circled half notehead

U+E100

noteheadCircledWhole

Circled whole notehead

U+E101

noteheadCircledDoubleWhole

Circled double whole notehead

U+E102

noteheadLargeArrowUpDoubleWhole

Large arrow up (highest pitch) double whole notehead

U+E103

noteheadLargeArrowUpWhole

Large arrow up (highest pitch) whole notehead

U+E104

noteheadLargeArrowUpHalf

Large arrow up (highest pitch) half notehead

U+E105

noteheadLargeArrowUpBlack

Large arrow up (highest pitch) black notehead

U+E106

noteheadLargeArrowDownDoubleWhole

Large arrow down (lowest pitch) double whole notehead

U+E107

noteheadLargeArrowDownWhole

Large arrow down (lowest pitch) whole notehead

U+E108

noteheadLargeArrowDownHalf

Large arrow down (lowest pitch) half notehead

U+E109

noteheadLargeArrowDownBlack

Large arrow down (lowest pitch) black notehead

U+E10A

noteheadParenthesisLeft

Opening parenthesis

U+E10B

noteheadParenthesisRight

Closing parenthesis

U+E10C

noteheadCircleSlash

Circle slash notehead

U+E10D

noteheadHeavyX

Heavy X notehead

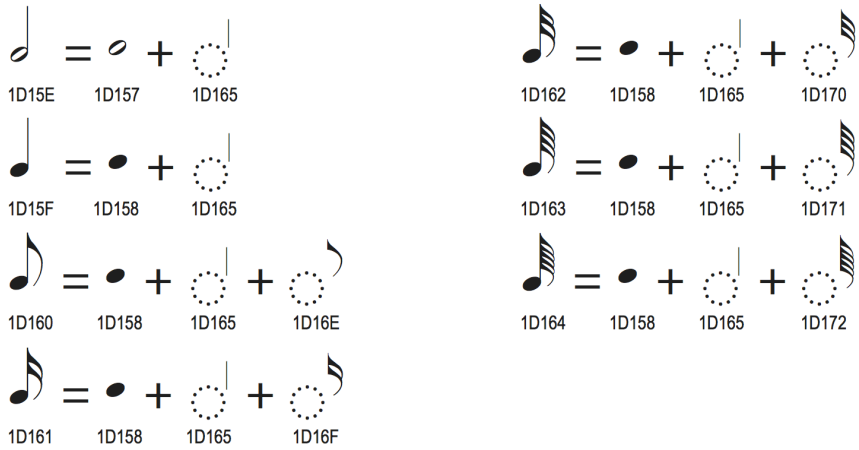
U+E10E

noteheadHeavyXHat

Heavy X with hat notehead

Implementation notes

These noteheads should be combined with stems and flags as necessary to create complete notes. In text-based applications, per the Unicode Musical Symbols documentation:



Scoring applications should draw stems using primitives, rather than using U+E240 (i.e. U+1D165 as shown in the above image[13]), so that they can be drawn to the correct length.

See also the implementation notes for flags (U+E280–U+E28F).

[13] From Chapter 15 "Symbols", *The Unicode Standard, Version 6.2*. Ed. Julie D. Allen et al. Mountain View; The Unicode Consortium, 2012.

Slash noteheads (U+E120–U+E12F)

U+E120

noteheadSlashVerticalEnds

Slash with vertical ends

U+E121 (and U+1D10D)

noteheadSlashHorizontalEnds

Slash with horizontal ends

U+E122

noteheadSlashWhite

White slash

U+E123

noteheadSlashDiamondWhite

Large white diamond

U+E124

noteheadSlashVerticalEndsSmall

Small slash with vertical ends

U+E125

noteheadSlashX

Large X notehead

U+E126

noteheadSlashVerticalEndsMuted

Muted slash with vertical ends

U+E127

noteheadSlashHorizontalEndsMuted

Muted slash with horizontal ends

U+E128

noteheadSlashWhiteMuted

Muted white slash

Implementation notes

See the implementation notes for noteheads (U+E0C0–U+E11F).

Round and square noteheads (U+E130–U+E14F)

U+E130

noteheadRoundBlackLarge

Large round black notehead

U+E131

noteheadRoundWhiteLarge

Large round white notehead

U+E132

noteheadRoundWhiteWithDotLarge

Large round white notehead with dot

U+E133

noteheadRoundBlack

Round black notehead

U+E134

noteheadRoundWhite

Round white notehead

U+E135

noteheadRoundWhiteWithDot

Round white notehead with dot

U+E136

noteheadRoundBlackSlashedLarge

Large round black notehead, slashed

U+E137

noteheadRoundWhiteSlashedLarge

Large round white notehead, slashed

U+E138

noteheadRoundBlackSlashed

Round black notehead, slashed

U+E139

noteheadRoundWhiteSlashed

Round white notehead, slashed

U+E13A

noteheadSquareBlackLarge

Large square black notehead

U+E13B

noteheadSquareBlackWhite

Large square white notehead

Implementation notes

See the implementation notes for noteheads (U+E0C0–U+E11F).

Note clusters (U+E150–U+E17F)

U+E150 (and U+1D15A)

noteheadClusterSquareWhite

Cluster notehead white (square)

U+E151 (and U+1D15B)

noteheadClusterSquareBlack

Cluster notehead black (square)

U+E152

noteheadClusterRoundWhite

Cluster notehead white (round)

U+E153

noteheadClusterRoundBlack

Cluster notehead black (round)

U+E154

noteheadClusterDoubleWhole2nd

Double whole note cluster, 2nd

U+E155

noteheadClusterWhole2nd

Whole note cluster, 2nd

U+E156

noteheadClusterHalf2nd

Half note cluster, 2nd

U+E157

noteheadClusterQuarter2nd

Quarter note cluster, 2nd

U+E158

noteheadClusterDoubleWhole3rd

Double whole note cluster, 3rd

U+E159

noteheadClusterWhole3rd

Whole note cluster, 3rd

U+E15A

noteheadClusterHalf3rd

Half note cluster, 3rd

U+E15B

noteheadClusterQuarter3rd

Quarter note cluster, 3rd

U+E15C

noteheadClusterDoubleWholeTop

Combining double whole note cluster, top

U+E15D

noteheadClusterDoubleWholeMiddle

Combining double whole note cluster, middle

U+E15E

noteheadClusterDoubleWholeBottom

Combining double whole note cluster, bottom

U+E15F

noteheadClusterWholeTop

Combining whole note cluster, top

U+E160

noteheadClusterWholeMiddle

Combining whole note cluster, middle

U+E161

noteheadClusterWholeBottom

Combining whole note cluster, bottom

U+E162

noteheadClusterHalfTop

Combining half note cluster, top

U+E163

noteheadClusterHalfMiddle

Combining half note cluster, middle

U+E164

noteheadClusterHalfBottom

Combining half note cluster, bottom

U+E165

noteheadClusterQuarterTop

Combining quarter note cluster, top

U+E166

noteheadClusterQuarterMiddle

Combining quarter note cluster, middle

U+E167

noteheadClusterQuarterBottom

Combining quarter note cluster, bottom

U+E168

noteheadDiamondClusterWhite2nd

White diamond cluster, 2nd

U+E169

noteheadDiamondClusterBlack2nd

Black diamond cluster, 2nd

U+E16A

noteheadDiamondClusterWhite3rd

White diamond cluster, 3rd

U+E16B

noteheadDiamondClusterBlack3rd

Black diamond cluster, 3rd

U+E16C

noteheadDiamondClusterWhiteTop

Combining white diamond cluster, top

U+E16D

noteheadDiamondClusterWhiteMiddle

Combining white diamond cluster, middle

U+E16E

noteheadDiamondClusterWhiteBottom

Combining white diamond cluster, bottom

U+E16F

noteheadDiamondClusterBlackTop

Combining black diamond cluster, top

U+E170

noteheadDiamondClusterBlackMiddle

Combining black diamond cluster, middle

U+E171

noteheadDiamondClusterBlackBottom

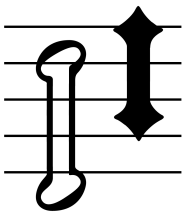
Combining black diamond cluster, bottom

Implementation notes

Scoring applications should draw simple note clusters (i.e. those that look like U+E150–U+E153) directly using primitives rather than using these glyphs, so that the clusters can be drawn spanning the correct interval.

The combining glyphs for note clusters (U+E15C–U+E171) are designed to allow the creation of clusters of any size, with a scoring application inserting the appropriate

number of “middle” segments between a single instance of the “top” and “bottom” segments:



The left-hand cluster is a stack (top to bottom) of 1 x U+E162, 3 x U+E163, 1 x U+E164; the right-hand cluster is 1 x U+E16F, 2 x U+E170, 1 x U+E171.

See also the implementation notes for noteheads (U+E0C0–U+E11F).

Note name noteheads (U+E180–U+E1DF)

U+E180

noteDoWhole

Do (whole note)

U+E181

noteReWhole

Re (whole note)

U+E182

noteMiWhole

Mi (whole note)

U+E183

noteFaWhole

Fa (whole note)

U+E184

noteSoWhole

So (whole note)

U+E185

noteLaWhole

La (whole note)

U+E186

noteTiWhole

Ti (whole note)

U+E187

noteSiWhole

Si (whole note)

U+E188

noteDoHalf

Do (half note)

U+E189

noteReHalf

Re (half note)

U+E18A

noteMiHalf

Mi (half note)

U+E18B

noteFaHalf

Fa (half note)

U+E18C

noteSoHalf

So (half note)

U+E18D

noteLaHalf

La (half note)

U+E18E

noteTiHalf

Ti (half note)

U+E18F

noteSiHalf

Si (half note)

U+E190

noteDoBlack

Do (black note)

U+E191

noteReBlack

Re (black note)

U+E192

noteMiBlack

Mi (black note)

U+E193

noteFaBlack

Fa (black note)

U+E194

noteSoBlack

So (black note)

U+E195

noteLaBlack

La (black note)

U+E196

noteTiBlack

Ti (black note)

U+E197

noteSiBlack

Si (black note)

U+E198

noteAFlatWhole

A flat (whole note)

U+E199

noteAWhole

A (whole note)

U+E19A

noteASharpWhole

A sharp (whole note)

U+E19B

noteBFlatWhole

B flat (whole note)

U+E19C

noteBWhole

B (whole note)

U+E19D

noteBSharpWhole

B sharp (whole note)

U+E19E

noteCFlatWhole

C flat (whole note)

U+E19F

noteCWhole

C (whole note)

U+E1A0

noteCSharpWhole

C sharp (whole note)

U+E1A1

noteDFlatWhole

D flat (whole note)

U+E1A2

noteDWhole

D (whole note)

U+E1A3

noteDSharpWhole

D sharp (whole note)

U+E1A4

noteEFlatWhole

E flat (whole note)

U+E1A5

noteEWhole

E (whole note)

U+E1A6

noteESharpWhole

E sharp (whole note)

U+E1A7

noteFFlatWhole

F flat (whole note)

U+E1A8

noteFWhole

F (whole note)

U+E1A9

noteFSharpWhole

F sharp (whole note)

U+E1AA

noteGFlatWhole

G flat (whole note)

U+E1AB

noteGWhole

G (whole note)

U+E1AC

noteGSharpWhole

G sharp (whole note)

U+E1AD

noteHWhole

H (whole note)

U+E1AE

noteHSharpWhole

H sharp (whole note)

U+E1AF

noteAFlatHalf

A flat (half note)

U+E1B0

noteAHalf

A (half note)

U+E1B1

noteASharpHalf

A sharp (half note)

U+E1B2

noteBFlatHalf

B flat (half note)

U+E1B3

noteBHalf

B (half note)

U+E1B4

noteBSharpHalf

B sharp (half note)

U+E1B5

noteCFlatHalf

C flat (half note)

U+E1B6

noteCHalf

C (half note)

U+E1B7

noteCSharpHalf

C sharp (half note)

U+E1B8

noteDFlatHalf

D flat (half note)

U+E1B9

noteDHalf

D (half note)

U+E1BA

noteDSharpHalf

D sharp (half note)

U+E1BB

noteEFlatHalf

E flat (half note)

U+E1BC

noteEHalf

E (half note)

U+E1BD

noteESharpHalf

E sharp (half note)

U+E1BE

noteFFlatHalf

F flat (half note)

U+E1BF

noteFHalf

F (half note)

U+E1C0

noteFSharpHalf

F sharp (half note)

U+E1C1

noteGFlatHalf

G flat (half note)

U+E1C2

noteGHalf

G (half note)

U+E1C3

noteGSharpHalf

G sharp (half note)

U+E1C4

noteHHalf

H (half note)

U+E1C5

noteHSharpHalf

H sharp (half note)

U+E1C6

noteAFlatBlack

A flat (black note)

U+E1C7

noteABlack

A (black note)

U+E1C8

noteASharpBlack

A sharp (black note)

U+E1C9

noteBFlatBlack

B flat (black note)

U+E1CA

noteBBlack

B (black note)

U+E1CB

noteBSharpBlack

B sharp (black note)

U+E1CC

noteCFlatBlack

C flat (black note)

U+E1CD

noteCBlack

C (black note)

U+E1CE

noteCSharpBlack

C sharp (black note)

U+E1CF

noteDFlatBlack

D flat (black note)

U+E1D0

noteDBlack

D (black note)

U+E1D1

noteDSharpBlack

D sharp (black note)

U+E1D2

noteEFlatBlack

E flat (black note)

U+E1D3

noteEBlack

E (black note)

U+E1D4

noteESharpBlack

E sharp (black note)

U+E1D5

noteFFlatBlack

F flat (black note)

U+E1D6

noteFBlack

F (black note)

U+E1D7

noteFSharpBlack

F sharp (black note)

U+E1D8

noteGFlatBlack

G flat (black note)

U+E1D9

noteGBlack

G (black note)

U+E1DA

noteGSharpBlack

G sharp (black note)

U+E1DB

noteHBlack

H (black note)

U+E1DC

noteHSharpBlack

H sharp (black note)

U+E1DD

noteEmptyWhole

Empty whole note

U+E1DE

noteEmptyHalf

Empty half note

U+E1DF

noteEmptyBlack

Empty black note

Implementation notes

These noteheads are designed for use by scoring applications to render music where the names of notes are shown inside noteheads. For practical use, scoring applications should provide a means of automatically substituting regular noteheads for the appropriate note name notehead glyph according to the pitch of each note.

See also the implementation notes for noteheads (U+E0C0–U+E11F).

Sacred harp shape notes (U+E1E0–U+E1FF)

U+E1E0

noteShapeRoundWhite

Round white (4-shape sol; 7-shape so)

U+E1E1

noteShapeRoundBlack

Round black (4-shape sol; 7-shape so)

U+E1E2

noteShapeSquareWhite

Square white (4-shape la; 7-shape la)

U+E1E3

noteShapeSquareBlack

Square black (4-shape la; 7-shape la)

U+E1E4

noteShapeTriangleRightWhite

Triangle right white (stem down; 4-shape fa; 7-shape fa)

U+E1E5

noteShapeTriangleRightBlack

Triangle right black (stem down; 4-shape fa; 7-shape fa)

U+E1E6

noteShapeTriangleLeftWhite

Triangle left white (stem up; 4-shape fa; 7-shape fa)

U+E1E7

noteShapeTriangleLeftBlack

Triangle left black (stem up; 4-shape fa; 7-shape fa)

U+E1E8

noteShapeDiamondWhite

Diamond white (4-shape mi; 7-shape mi)

U+E1E9

noteShapeDiamondBlack

Diamond black (4-shape mi; 7-shape mi)

U+E1EA

noteShapeTriangleUpWhite

Triangle up white (7-shape do)

U+E1EB

noteShapeTriangleUpBlack

Triangle up black (7-shape do)

U+E1EC

noteShapeMoonWhite

Moon white (7-shape re)

U+E1ED

noteShapeMoonBlack

Moon black (7-shape re)

U+E1EE

noteShapeTriangleRoundWhite

Triangle-round white (7-shape ti)

U+E1EF

noteShapeTriangleRoundBlack

Triangle-round black (7-shape ti)

Implementation notes

For practical use, scoring applications should provide a means of automatically substituting regular noteheads for the appropriate shape note notehead glyph according to the pitch of each note.

See also the implementation notes for noteheads (U+E0C0–U+E11F).

Individual notes (U+E200–U+E21F)

U+E200 (and U+1D15C)

noteDoubleWhole

Double whole note (breve)

U+E201 (and U+1D15D)

noteWhole

Whole note (semibreve)

U+E202 (and U+1D15E)

noteHalfUp

Half note (minim) stem up

U+E203

noteHalfDown

Half note (minim) stem down

U+E204 (and U+1D15F)

noteQuarterUp

Quarter note (crotchet) stem up

U+E205

noteQuarterDown

Quarter note (crotchet) stem down

U+E206 (and U+1D160)

noteEighthUp

Eighth note (quaver) stem up

U+E207

noteEighthDown

Eighth note (quaver) stem down

U+E208 (and U+1D161)

note16thUp

16th note (semiquaver) stem up

U+E209

note16thDown

16th note (semiquaver) stem down

U+E20A (and U+1D162)

note32ndUp

32nd note (demisemiquaver) stem up

U+E20B

note32ndDown

32nd note (demisemiquaver) stem down

U+E20C (and U+1D163)

note64thUp

64th note (hemidemisemiquaver) stem up

U+E20D

note64thDown

64th note (hemidemisemiquaver) stem down

U+E20E (and U+1D164)

note128thUp

128th note (semihemidemisemiquaver) stem up

U+E20F

note128thDown

128th note (semihemidemisemiquaver) stem down

U+E210

note256thUp

256th note (demisemihemidemisemiquaver) stem up

U+E211

note256thDown

256th note (demisemihemidemisemiquaver) stem

U+E212

note512thUp

512th note (hemidemisemihemidemisemiquaver)

U+E213

note512thDown

512th note (hemidemisemihemidemisemiquaver)

U+E214

note1024thUp

1024th note (semihemidemisemihemidemisemiquaver)

U+E215

note1024thDown

1024th note (semihemidemisemihemidemisemiquaver)

U+E216 (and U+1D16D)

augmentationDot

- Augmentation dot

Recommended stylistic alternates

U+E200

noteDoubleWholeAlt

Double whole note (breve), single vertical strokes

Implementation notes

This range is most useful in fonts intended for text-based applications, with metrics that are compatible for mixing musical symbols with text.

In such a font, the precomposed note glyphs between U+E202 and U+E215 may be used for displaying metronome marks and simple metric modulations. More complex metric modulations and *l'istesso tempo* directions may be drawn using these glyphs in conjunction with the range between U+E220–U+E23F.

Scoring applications should draw all notes by combining notehead glyphs — e.g. U+E0C3 for quarter notes (crotchets) and shorter notes, U+E0C2 for half notes (minims) — with stems drawn using primitives.

Beamed groups of notes (U+E220–U+E23F)

U+E220

textBlackNoteShortStem

Black note, short stem

U+E221

textBlackNoteLongStem

Black note, long stem

U+E222

textBlackNoteFrac8thShortStem

Black note, fractional 8th beam, short stem

U+E223

textBlackNoteFrac8thLongStem

Black note, factional 8th beam, long stem

U+E224

textBlackNoteFrac16thShortStem

Black note, fractional 16th beam, short stem

U+E225

textBlackNoteFrac16thLongStem

Black note, fractional 16th beam, long stem

U+E226

textBlackNoteFrac32ndLongStem

Black note, fractional 32nd beam, long stem

U+E227

textCont8thBeamShortStem

Continuing 8th beam for short stem

U+E228

textCont8thBeamLongStem

Continuing 8th beam for long stem

U+E229

textCont16thBeamShortStem

Continuing 16th beam for short stem

U+E29A

textCont16thBeamLongStem

Continuing 16th beam for long stem

U+E29B

textCont32ndBeamLongStem

Continuing 32nd beam for long stem

U+E29C

textAugmentationDot

Augmentation dot

U+E29D

textTie

Tie

U+E29E

textTupletBracketStartShortStem

Tuplet bracket start for short stem

U+E29F

textTuplet3ShortStem

Tuplet number 3 for short stem

U+E230

textTupletBracketEndShortStem

Tuplet bracket end for short stem

U+E231

textTupletBracketStartLongStem

Tuplet bracket start for long stem

U+E232

textTuplet3LongStem

Tuplet number 3 for long stem

U+E233

textTupletBracketEndLongStem

Tuplet bracket end for long stem

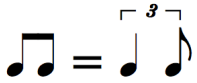
Implementation notes

This range is most useful in fonts intended for text-based applications, with metrics that are compatible for mixing musical symbols with text.

In such a font, these glyphs may be used for displaying complex metric modulations and *l'istesso tempo* directions in conjunction with the precomposed note glyphs between U+E202 and U+E215.

By way of example:

U+E220, U+E228, space, U+E222, U+E229, space, U+E224



U+E220, U+E228, space, U+E222, space, =, U+E231, U+E220, U+E232, space, U+E233, U+E206

U+E220, U+E228, U+E22C, space, U+E228, U+E224

Stems (U+E240–U+E25F)

U+E240 (and U+1D165)

stem

Combining stem

U+E241 (and U+1D166)

stemSprechgesang

Combining sprechgesang stem

U+E242

stemSwished

Combining swished stem

U+E243

stemPendereckiTremolo

Combining Penderecki unmeasured tremolo stem

U+E244

stemSulPonticello

Combining sul ponticello (bow behind bridge) stem

U+E245

stemBowOnBridge

Combining bow on bridge stem

U+E246

stemBowOnTailpiece

Combining bow on tailpiece stem

U+E247

stemBuzzRoll

Combining buzz roll stem

U+E248

stemDamp

Combining damp stem

U+E249

stemVibratoPulse

Combining vibrato pulse accent (Saunders) stem

U+E24A

stemMultiphonicsBlack

Combining multiphonics (black) stem

U+E24B

stemMultiphonicsWhite

Combining multiphonics (white) stem

U+E24C

stemMultiphonicsBlackWhite

Combining multiphonics (black and white) stem

U+E24D

stemSussurando

Combining sussurando stem

U+E24E

stemRimShot

Combining rim shot stem

Implementation notes

The glyphs shown here may be combined with noteheads to produce precomposed glyphs with a fixed stem length.

Scoring applications should produce this effect by imposing the required symbol on a stem drawn using a primitive line, rather than using these precomposed stem glyphs:

- Sprechgesang (U+E686)
- Swish (U+EB01)
- Penderecki unmeasured tremolo (U+E26B)
- Sul ponticello (U+E244)
- Bow on bridge (U+E245)
- Bow on tailpiece (U+E246)
- Buzz roll (U+E247)
- Damp (U+E64B)
- Vibrato pulse accent (U+E651)
- Multiphonics (U+E627–U+E629)
- Sussurando (U+E68B)
- Rim shot (U+E86D)

Tremolos (U+E260–U+E27F)

U+E260 (and U+1D167)

tremolo1

Combining tremolo 1

U+E261 (and U+1D168)

tremolo2

Combining tremolo 2

U+E262 (and U+1D169)

tremolo3

Combining tremolo 3

U+E263

tremolo4

Combining tremolo 4

U+E264

tremolo5

Combining tremolo 5

U+E265 (and U+1D16A)

tremoloFingered1

Fingered tremolo 1

U+E266 (and U+1D16B)

tremoloFingered2

Fingered tremolo 2

U+E267 (and U+1D16C)

tremoloFingered3

Fingered tremolo 3

U+E268

tremoloFingered4

Fingered tremolo 4

U+E269

tremoloFingered5

Fingered tremolo 5

U+E26A

buzzRoll

Buzz roll

U+E26B

pendereckiTremolo

Penderecki unmeasured tremolo

U+E26C

unmeasuredTremolo

Wieniawski unmeasured tremolo

U+E26D

unmeasuredTremoloSimple

Wieniawski unmeasured tremolo (simpler)

Implementation notes

Scoring applications may simply use multiple instances of U+E260 imposed on note stems to draw one-note tremolos with different numbers of slashes.

The fingered tremolo glyphs (U+E265–U+E269) are for two-note tremolos. Scoring applications should draw two-note tremolos using the same primitives used for drawing beams, rather than using these glyphs.

Flags (U+E280–U+E29F)

U+E280 (and U+1D16E)

flag8thUp

Combining flag 1 (8th) above

U+E281

flag8thDown

Combining flag 1 (8th) below

U+E282 (and U+1D16F)

flag16thUp

Combining flag 2 (16th) above

U+E283

flag16thDown

Combining flag 2 (16th) below

U+E284 (and U+1D170)

flag32ndUp

Combining flag 3 (32nd) above

U+E285

flag32ndDown

Combining flag 3 (32nd) below

U+E286 (and U+1D171)

flag64thUp

Combining flag 4 (64th) above

U+E287

flag64thDown

Combining flag 4 (64th) below

U+E288 (and U+1D172)

flag128thUp

Combining flag 5 (128th) above

U+E289

flag128thDown

Combining flag 5 (128th) below

U+E28A

flag256thUp

Combining flag 6 (256th) above

U+E28B

flag256thDown

Combining flag 6 (256th) below

U+E28C

flag512thUp

Combining flag 7 (512th) above

U+E28D

flag512thDown

Combining flag 7 (512th) below

U+E28E

flags1024thUp

Combining flag 8 (1024th) above

U+E28F

flags1024thDown

Combining flag 8 (1024th) below

U+E290

flagInternalUp

Internal combining flag above

U+E291

flagInternalDown

Internal combining flag below

Recommended stylistic alternates

U+E280

flag8thUpStraight

Combining flag 1 (8th) above (straight)

U+E281

flag8thDownStraight

Combining flag 1 (8th) below (straight)

U+E282

flag16thUpStraight

Combining flag 2 (16th) above (straight)

U+E283

flag16thDownStraight

Combining flag 2 (16th) below (straight)

U+E284

flag32ndUpStraight

Combining flag 3 (32nd) above (straight)

U+E285

flag32ndDownStraight

Combining flag 3 (32nd) below (straight)

U+E286

flag64thUpStraight

Combining flag 4 (64th) above (straight)

U+E287

flag64thDownStraight

Combining flag 4 (64th) below (straight)

U+E288

flag128thUpStraight

Combining flag 5 (128th) above (straight)

U+E289

flag128thDownStraight

Combining flag 5 (128th) below (straight)

U+E28A

flag256thUpStraight

Combining flag 6 (256th) above (straight)

U+E28B

flag256thDownStraight

Combining flag 6 (256th) below (straight)

U+E28C

flag512thUpStraight

Combining flag 7 (512th) above (straight)

U+E28D

flag512thDownStraight

Combining flag 7 (512th) below (straight)

U+E28E

flags1024thUpStraight

Combining flag 8 (1024th) above (straight)

U+E28F

flags1024thDownStraight

Combining flag 8 (1024th) below (straight)

U+E280

flag8thUpShort

Combining flag 1 above (short)

U+E281

flag16thUpShort

Combining flag 2 above (short)

U+E282

flag32ndUpShort

Combining flag 3 above (short)

U+E283

flag64thUpShort

Combining flag 4 above (short)

U+284

flag128thUpShort

Combining flag 5 above (short)

U+285

flag256thUpShort

Combining flag 6 above (short)

U+286

flag512thUpShort

Combining flag 7 above (short)

U+287

flag1024thUpShort

Combining flag 8 above (short)

Implementation notes

Scoring applications may create groups of flags for notes shorter than 16th notes (semiquavers) by combining U+E282 with the required number of U+E290 for stem up notes, or U+E283 with the required number of U+E291 for stem down notes, stacking U+E290 above or U+E291 below respectively, ensuring even spacing.

The set of stylistic alternates for shorter flags may be substituted by a scoring application in the case of a dotted note with an upward stem, to avoid collisions between the augmentation dot and the flag.

Standard accidentals (12-EDO) (U+E2A0–U+E2AF)

U+E2A0 (and 266D)

accidentalFlat

Flat

U+E2A1 (and 266E)

accidentalNatural

Natural

U+E2A2 (and 266F)

accidentalSharp

Sharp

U+E2A3 (and U+1D12A)

accidentalDoubleSharp

Double sharp

U+E2A4 (and U+1D12B)

accidentalDoubleFlat

Double flat

U+E2A5

accidentalTripleSharp

Triple sharp

U+E2A6

accidentalTripleFlat

Triple flat

U+E2A7

accidentalNaturalFlat

Natural flat

U+E2A8

accidentalNaturalSharp

Natural sharp

U+E2A9

accidentalSharpSharp

Sharp sharp

Recommended stylistic alternates

U+E2A0

accidentalFlatSmall

Flat (for small staves)

U+E2A1

accidentalNaturalSmall

Natural (for small staves)

U+E2A2

accidentalSharpSmall

Sharp (for small staves)

Implementation notes

Scoring applications may choose to substitute stylistic alternate versions of the common accidentals glyphs for a better appearance on smaller staves.

Quartertone accidentals (24-EDO) (U+E2B0–U+E2CF)

U+E2B0 (and U+1D132)

accidentalQuarterSharp3

Quarter-tone sharp

U+E2B1 (and U+1D133)

accidentalQuarterFlat3

Quarter-tone flat

U+E2B2

accidentalQuarterFlat5

Filled reversed flat (quarter-tone flat)

U+E2B3

accidentalSharpReversed

Reversed sharp

U+E2B4

accidentalNaturalReversed

Reversed natural

U+E2B5

accidentalDoubleFlatReversed

Reversed double flat

U+E2B6

accidentalFlatInverted

Inverted flat

U+E2B7

accidentalDoubleFlatInverted

Inverted double flat

U+E2B8

accidentalThreeQuartersFlatGrisey

Three-quarter-tones flat (Grisey)

U+E2B9

accidentalThreeQuartersFlatTartini

Three-quarter-tones flat (Tartini)

U+E2BA

accidentalQuarterFlatTartini

Quarter-tone flat (van Blankenburg)

U+E2BB

accidentalThreeQuartersFlatCouper

Three-quarter-tones flat (Couper)

Gould arrow quartertone accidentals (24-EDO) (U+E2D0–U+E2EF)

U+E2D0 (and U+1D12C)

accidentalQuarterFlatArrowUp

Quarter-tone flat

U+E2D1 (and U+1D12D)

accidentalThreeQuartersFlatArrowDown

Three-quarter-tones flat

U+E2D2 (and U+1D12E)

accidentalQuarterSharpNaturalArrowUp

Quarter-tone sharp

U+E2D3 (and U+1D12F)

accidentalQuarterFlatNaturalArrowDown

Quarter-tone flat

U+E2D4 (and U+1D130)

accidentalThreeQuartersSharpArrowUp

Three-quarter-tones sharp

U+E2D5 (and U+1D131)

accidentalQuarterSharpArrowDown

Quarter-tone flat

U+E2D6

accidentalDoubleSharpArrowUp

Five-quarter-tones sharp

U+E2D7

accidentalDoubleSharpArrowDown

Three-quarter-tones sharp

U+E2D8

accidentalDoubleFlatArrowUp

Three-quarter-tones flat

U+E2D9

accidentalDoubleFlatArrowDown

Five-quarter-tones flat

U+E2DA

accidentalArrowUp

Arrow up (raise by one quarter-tone)

U+E2DB

accidentalArrowDown

Arrow down (lower by one quarter-tone)

Stein-Zimmermann accidentals (24-EDO) (U+E2F0–U+E2F7)

U+E2F0

accidentalQuarterFlat4

Reversed flat (quarter-tone flat) (Stein)

U+E2F1

accidentalThreeQuartersFlat2

Reversed flat and flat (three-quarter-tones flat) (Zimmermann)

U+E2F2

accidentalQuarterSharp4

Half sharp (quarter-tone sharp) (Stein)

U+E2F3

accidentalThreeQuartersSharp2

One and a half sharps (three-quarter-tones sharp) (Stein)

Extended Stein-Zimmermann accidentals (U+E2F8–U+E307)

U+E2F8

accidentalReversedFlatArrowUp

Reversed flat with arrow up

U+E2F9

accidentalReversedFlatArrowDown

Reversed flat with arrow down

U+E2FA

accidentalFilledReversedFlatArrowUp

Filled reversed flat with arrow up

U+E2FB

accidentalFilledReversedFlatArrowDown

Filled reversed flat with arrow down

U+E2FC

accidentalReversedFlatAndFlatArrowUp

Reversed flat and flat with arrow up

U+E2FD

accidentalReversedFlatAndFlatArrowDown

Reversed flat and flat with arrow down

U+E2FE

accidentalFilledReversedFlatAndFlat

Filled reversed flat and flat

U+E2FF

accidentalFilledReversedFlatAndFlatArrowUp

Filled reversed flat and flat with arrow up

U+E300

accidentalFilledReversedFlatAndFlatArrowDown

Filled reversed flat and flat with arrow down

U+E301

accidentalHalfSharpArrowUp

Half sharp with arrow up

U+E302

accidentalHalfSharpArrowDown

Half sharp with arrow down

U+E303

accidentalOneAndAHalfSharpsArrowUp

One and a half sharps with arrow up

U+E304

accidentalOneAndAHalfSharpsArrowDown

One and a half sharps with arrow down

Implementation notes

These accidentals were not actually proposed by Richard Stein or Bernd Zimmermann, but are instead logical extensions of their symbols adding arrows to provide options for notating slight pitch modifications[14].

[14] Gould, *ibid.*, page 96 acknowledges the Stein-Zimmermann accidentals as the most commonly-used symbols with fixed meanings; however, the extensions provided here do not have fixed meanings.

Sims accidentals (72-EDO) (U+E308–U+E30F)

U+E308

accidentalManeriSims12Down

1/12 tone low

U+E309

accidentalManeriSims6Down

1/6 tone low

U+E30A

accidentalManeriSims4Down

1/4 tone low

U+E30B

accidentalManeriSims12Up

1/12 tone high

U+E30C

accidentalManeriSims6Up

1/6 tone high

U+E30D

accidentalManeriSims4Up

1/4 tone high

Implementation notes

These glyphs may be used alone and to the left of the standard 12-EDO accidentals (U+E2A0–U+E2AF).

Johnston accidentals (just intonation) (U+E318–U+E31F)

U+E318

accidentalJohnstonPlus

Plus (raise by 81:80)

U+E319

accidentalJohnstonMinus

Minus (lower by 81:80)

U+E31A

accidentalJohnstonEl

Inverted seven (raise by 36:35)

U+E31B

accidentalJohnstonSeven

Seven (lower by 36:35)

U+E31C

accidentalJohnstonArrowUp

Up arrow (raise by 33:32)

U+E31D

accidentalJohnstonArrowDown

Down arrow (lower by 33:32)

U+E31E

accidentalJohnston13

Thirteen (raise by 65:64~)

U+E31F

accidentalJohnston31

Inverted 13 (lower by 65:64)

Implementation notes

These glyphs are intended for combining with the standard 12-EDO accidentals (U+E2A0–U+E2AF).

Extended Helmholtz-Ellis accidentals (just intonation) (U+E320–U+E35F)

U+E320

accidentalDoubleFlatOneArrowDown

Double flat lowered by one syntonic comma

U+E321

accidentalFlatOneArrowDown

Flat lowered by one syntonic comma

U+E322

accidentalNaturalOneArrowDown

Natural lowered by one syntonic comma

U+E323

accidentalSharpOneArrowDown

Sharp lowered by one syntonic comma

U+E324

accidentalDoubleSharpOneArrowDown

Double sharp lowered by one syntonic comma

U+E325

accidentalDoubleFlatOneArrowUp

Double flat raised by one syntonic comma

U+E326

accidentalFlatOneArrowUp

Flat raised by one syntonic comma

U+E327

accidentalNaturalOneArrowUp

Natural raised by one syntonic comma

U+E328

accidentalSharpOneArrowUp

Sharp raised by one syntonic comma

U+E329

accidentalDoubleSharpOneArrowUp

Double sharp raised by one syntonic comma

U+E32A

accidentalDoubleFlatTwoArrowsDown

Double flat lowered by two syntonic commas

U+E32B

accidentalFlatTwoArrowsDown

Flat lowered by two syntonic commas

U+E32C

accidentalNaturalTwoArrowsDown

Natural lowered by two syntonic commas

U+E32D

accidentalSharpTwoArrowsDown

Sharp lowered by two syntonic commas

U+E32E

accidentalDoubleSharpTwoArrowsDown

Double sharp lowered by two syntonic commas

U+E32F

accidentalDoubleFlatTwoArrowsUp

Double flat raised by two syntonic commas

U+E330

accidentalFlatTwoArrowsUp

Flat raised by two syntonic commas

U+E331

accidentalNaturalTwoArrowsUp

Natural raised by two syntonic commas

U+E332

accidentalSharpTwoArrowsUp

Sharp raised by two syntonic commas

U+E333

accidentalDoubleSharpTwoArrowsUp

Double sharp raised by two syntonic commas

U+E334

accidentalDoubleFlatThreeArrowsDown

Double flat lowered by three syntonic commas

U+E335

accidentalFlatThreeArrowsDown

Flat lowered by three syntonic commas

U+E336

accidentalNaturalThreeArrowsDown

Natural lowered by three syntonic commas

U+E337

accidentalSharpThreeArrowsDown

Sharp lowered by three syntonic commas

U+E338

accidentalDoubleSharpThreeArrowsDown

Double sharp lowered by three syntonic commas

U+E339

accidentalDoubleFlatThreeArrowsUp

Double flat raised by three syntonic commas

U+E33A

accidentalFlatThreeArrowsUp

Flat raised by three syntonic commas

U+E33B

accidentalNaturalThreeArrowsUp

Natural raised by three syntonic commas

U+E33C

accidentalSharpThreeArrowsUp

Sharp raised by three syntonic commas

U+E33D

accidentalDoubleSharpThreeArrowsUp

Double sharp raised by three syntonic commas

U+E33E

accidentalLowerOneSeptimalComma

Lower by one septimal comma

U+E33F

accidentalRaiseOneSeptimalComma

Raise by one septimal comma

U+E340

accidentalLowerTwoSeptimalCommas

Lower by two septimal commas

U+E341

accidentalRaiseTwoSeptimalCommas

Raise by two septimal commas

U+E342

accidentalLowerOneUndecimalQuartertone

Lower by one undecimal quartertone

U+E343

accidentalRaiseOneUndecimalQuartertone

Raise by one undecimal quartertone

U+E344

accidentalLowerOneTridecimalQuartertone

Lower by one tridecimal quartertone

U+E345

accidentalRaiseOneTridecimalQuartertone

Raise by one tridecimal quartertone

U+E346

accidentalCombiningLower17Schisma

Combining lower by one 17-limit schisma

U+E347

accidentalCombiningRaise17Schisma

Combining raise by one 17-limit schisma

U+E348

accidentalCombiningLower19Schisma

Combining lower by one 19-limit schisma

U+E349

accidentalCombiningRaise19Schisma

Combining raise by one 19-limit schisma

U+E34A

accidentalCombiningLower23Limit29LimitComma

Combining lower by one 23-limit comma or 29-limit comma

U+E34B

accidentalCombiningRaise23Limit29LimitComma

Combining raise by one 23-limit comma or 29-limit comma

U+E34C

accidentalCombiningLower31Schisma

Combining lower by one 31-limit schisma

U+E34D

accidentalCombiningRaise31Schisma

Combining raise by one 31-limit schisma

U+E34E

accidentalCombiningOpenCurlyBrace

Combining open curly brace

U+E34F

accidentalCombiningCloseCurlyBrace

Combining close curly brace

U+E350

accidentalDoubleFlatEqualTempered

Double flat equal tempered semitone

U+E351

accidentalFlatEqualTempered

Flat equal tempered semitone

U+E352

accidentalNaturalEqualTempered

Natural equal tempered semitone

U+E353

accidentalSharpEqualTempered

Sharp equal tempered semitone

U+E354

accidentalDoubleSharpEqualTempered

Double sharp equal tempered semitone

Spartan Sagittal single-shaft accidentals (U+E360–U+E36F)

U+E360

accSagittal57KleismaUp

5:7 kleisma up (5:7k, ~11:13k, 7C less 5C)

U+E361

accSagittal57KleismaDown

5:7 kleisma down

U+E362

accSagittal5CommaUp

5 comma up (5C) 1° up [22 27 29 34 41 46 53 96 EDOs] 1/12-tone up

U+E363

accSagittal5CommaDown

5 comma down 1° dn [22 27 29 34 41 46 53 96 EDOs] 1/12-tone down

U+E364

accSagittal7CommaUp

7 comma up (7C) 1° up [43 EDO] 2° up [72 EDO] 1/6-tone up

U+E365

accSagittal7CommaDown

7 comma down 1° down [43 EDO] 2° down [72 EDO] 1/6-tone down

U+E366

accSagittal25SmallDiesisUp

25 small diesis up (25S, ~5:13S, ~37S, 5C plus 5C) 2° up [53 EDO]

U+E367

accSagittal25SmallDiesisDown

25 small diesis down 2° down [53 EDO]

U+E368

accSagittal35MediumDiesisUp

35 medium diesis up (35M, ~13M, ~125M, 5C plus 7C)

U+E369

accSagittal35MediumDiesisDown

35 medium diesis down 1°[50] 2°[27] dn / 2/9-tone down

U+E36A

accSagittal11MediumDiesisUp

11 medium diesis up (11M) 1°[17 31] 2°46 up 1/4-tone up

U+E36B

accSagittal11MediumDiesisDown

11 medium diesis down 1°[17 31] 2°46 dn 1/4-tone down

U+E36C

accSagittal11LargeDiesisUp

11 large diesis up (11L) (sharp less 11M) 3° up [46 EDO]

U+E36D

accSagittal11LargeDiesisDown

11 large diesis down 3° down [46 EDO]

U+E36E

accSagittal35LargeDiesisUp

35 large diesis up (35L , ~13L, ~125L, sharp less 35M) 2° down [50

U+E36F

accSagittal35LargeDiesusDown

35 large diesis down 2° down [50 EDO] 5/18-tone down

Implementation notes

It is not necessary to implement the complete Sagittal microtonal notation system. The Spartan set is sufficient to notate 13-limit just intonation (JI), 1/12-tones, 50 common equal divisions of the octave (EDOs), and their related linear temperaments.

The eight pairs of single-shaft accidentals above are sufficient to provide these capabilities when used alone, and to the left of the standard double-flat, flat, sharp and large double-sharp (U+E2A4, U+E2A0, U+E2A2, U+E43C). This is called "mixed Sagittal."

As an alternative, the following group (the multi-shaft Spartans) provides a complete set of stand-alone accidentals to replace each of the above combinations of a single-shaft Sagittal with a standard accidental. This is called "pure Sagittal." The standard natural (U+E2A1) is used alone in both mixed and pure variants, but only to cancel a previous accidental.

Sagittal accidentals are not intended to be combined with one another, inasmuch as symbols representing useful combinations and powers of primes are already provided. An accidental can often be used to represent alternative commas that differ by 2 cents or less. In such cases the intended comma ratio may be determined by the note to which it is applied, or by the musical context. Alternatively, diacritics (from the Herculean and subsequent extensions) may be added to distinguish these commas. Commas which require diacritics for exact representation are preceded by a tilde "~" in the glyph descriptions.

Sagittal extensions following Spartan allow notation of JI ratios with primes beyond 13, and more combinations of lower primes, as well as finer tone-fractions, degrees of larger EDOs, and more complex temperaments, all with single Sagittal accidentals. The same choice of mixed versus pure is available with each extension. See http://sagittal.org for more information.

Spartan Sagittal multi-shaft accidentals (U+E370–U+E397)

U+E370

accSagittalSharp25SDown

Sharp 25S-down 3° up [53 EDO]

U+E371

accSagittalFlat25SUp

Flat 25S-up 3° down [53 EDO]

U+E372

accSagittalSharp7CDown

Sharp 7C-down 2° up [43 EDO] 4° up [72 EDO] 1/3-tone up

U+E373

accSagittalFlat7CUp

Flat 7C-up 2° down [43 EDO] 4° down [72 EDO] 1/3-tone down

U+E374

accSagittalSharp5CDown

Sharp 5C-down 2°[22 29] 3°[34 41] 4°[46 53 60] u 5/12-tone up

U+E375

accSagittalFlat5CUp

Flat 5C-up 2°[22,29] 3°[34 41] 4°[46 53 60] d 5/12-tone down

U+E376

accSagittalSharp57kDown

Sharp 5:7k-down

U+E377

accSagittalFlat57kUp

Flat 5:7k-up

U+E378

accSagittalSharpApotomeUp

Sharp (apotome up) [almost all EDOs] 1/2-tone up

U+E379

accSagittalFlatApotomeDown

Flat (apotome down) [almost all EDOs] 1/2-tone down

U+E37A–U+E37B

Unused

U+E37C

accSagittalSharp57kUp

Sharp 5:7k-up

U+E37D

accSagittalFlat57kDown

Flat 5:7k-down

U+E37E

accSagittalSharp5CUp

Sharp 5C-up 4°[22 29] 5°[27 34 41] 6°[39 46 53] u 7/12-tone up

U+E37F

accSagittalFlat5CDown

Flat 5C-down 4°[22 29] 5°[27 34 41] 6°[39 46 53] d 7/12-tone down

U+E380

accSagittalSharp7CUp

Sharp 7C-up 4° up [43 EDO] 8° up [72 EDO] 2/3-tone up

U+E381

accSagittalFlat7CDown

Flat 7C-down 4° down [43 EDO] 8° down [72 EDO] 2/3-tone down

U+E382

accSagittalSharp25SUp

Sharp 25S-up 7° up [53 EDO]

U+E383

accSagittalFlat25SDown

Flat 25S-down 7° down [53 EDO]

U+E384

accSagittalSharp35MUp

Sharp 35M up 4° up [50 EDO] 6° up [27 EDO] 13/18-tone up

U+E385

accSagittalFlat35MDown

Flat 35M down 4° down [50 EDO] 6° down [27 EDO] 13/18-tone down

U+E386

accSagittalSharp11MUp

Sharp 11M up 3° up [17 31 EDOs] 7° up [46 EDO] 3/4-tone up

U+E387

accSagittalFlat11MDown

Flat 11M down 3° dn [17 31 EDOs] 7° down [46 EDO] 3/4-tone down

U+E388

accSagittalSharp11LUp

Sharp 11L up 8° up [46 EDO]

U+E389

accSagittalFlat11LDown

Flat 11L down 8° up [46 EDO]

U+E38A

accSagittalSharp35LUp

Sharp 35L up 5° up [50 EDO]

U+E38B

accSagittalFlat35LDown

Flat 35L down 5° down [50 EDO]

U+E38C

accSagittalDoubleSharp25SDown

Double sharp 25S down 8°up [53 EDO]

U+E38D

accSagittalDoubleFlat25SUp

Double flat 25S up 8°down [53 EDO]

U+E38E

accSagittalDoubleSharp7CDown

Double sharp 7C down 5°[43] 10°[72] up 5/6-tone up

U+E38F

accSagittalDoubleFlat7CUp

Double flat 7C up 5° down [43 EDO] 10° down [72 EDO] 5/6-tone

U+E390

accSagittalDoubleSharp5CDown

Double sharp 5C-down, 5°[22 29] 7°[34 41] 9°53 up 11/12 tone down

U+E391

accSagittalDoubleFlat5CUp

Double flat 5C-up 5°[22 29] 7°[34 41] 9°[53] down 11/12 tone down

U+E392

accSagittalDoubleSharp57kDown

Double sharp 5:7k-down

U+E393

accSagittalDoubleFlat57kUp

Double flat 5:7k up

U+E394

accSagittalDoubleSharp2ApotomesUp

Double sharp (2 apotomes up)
[almost all EDOs] whole-tone up

U+E395

accSagittalDoubleFlat2ApotomesDown

Double flat (2 apotomes down)
[almost all EDOs] whole-tone down

Athenian Sagittal extension (medium precision) accidentals (U+E398–U+E3BF)

U+E398

accSagittal711KleismaUp

7:11 kleisma up (7:11k , ~29k)

U+E399

accSagittal711KleismaDown

7:11 kleisma down

U+E39A

accSagittal17CommaUp

17 comma up (17C)

U+E39B

accSagittal17CommaDown

17 comma down

U+E39C

accSagittal55CommaUp

55 comma up (55C, 11M less 5C) 3°up [96 EDO] 3/16-tone up

U+E39D

accSagittal55CommaDown

55 comma down 3° down [96 EDO] 3/16-tone down

U+E39E

accSagittal711CommaUp

7:11 comma up (7:11C, ~13:17S, ~29S, 11L less 7C) 1° up [60 EDO]

U+E39F

accSagittal711CommaDown

7:11 comma down 1° down [60 EDO] 1/10- tone down

U+E3A0

accSagittal511SmallDiesisUp

5:11 small diesis up (5:11S, ~7:13S, ~11:17S, 5:7k plus 7:11C)

U+E3A1

accSagittal511SmallDiesisDown

5:11 small diesis down

U+E3A2

accSagittalSharp511SDown

Sharp 5:11S-down

U+E3A3

accSagittalFlat511SUp

Flat 5:11S-up

U+E3A4

accSagittalSharp711CDown

Sharp 7:11C-down 4° up [60 EDO] 2/5-tone up

U+E3A5

accSagittalFlat711CUp

Flat 7:11C-up 4° down [60 EDO] 2/5-tone down

U+E3A6

accSagittalSharp55CDown

Sharp 55C down 5° up [96 EDO] 5/16-tone up

U+E3A7

accSagittalFlat55CUp

Flat 55C-up 5° down [96 EDO] 5/16-tone down

U+E3A8

accSagittalSharp17CDown

Sharp 17C-down

U+E3A9

accSagittalFlat17CUp

Flat 17C-up

U+E3AA

accSagittalSharp711kDown

Sharp 7:11k-down

U+E3AB

accSagittalFlat711kUp

Flat 7:11k-up

U+E3AC

accSagittalSharp711kUp

Sharp 7:11k-up

U+E3AD

accSagittalFlat711kDown

Flat 7:11k-down

U+E3AE

accSagittalSharp17CUp

Sharp 17C-up

U+E3AF

accSagittalFlat17CDown

Flat 17C-down

U+E3B0

accSagittalSharp55CUp

Sharp 55C-up 11° up [96 EDO] 11/16-tone up

U+E3B1

accSagittalFlat55CDown

Flat 55C-down 11° down [96 EDO] 11/16-tone down

U+E3B2

accSagittalSharp711CUp

Sharp 7:11C-up 6° up [60 EDO] 3/5-tone up

U+E3B3

accSagittalFlat711CDown

Flat 7:11C-down 6° down [60 EDO] 3/5- tone down

U+E3B4

accSagittalSharp611SUp

Sharp 5:11S-up

U+E3B5

accSagittalFlat511SDown

Flat 5:11S-down

U+E3B6

accSagittalDoubleSharp511SDown

Double sharp 5:11S-down

U+E3B7

accSagittalDoubleFlat511SUp

Double flat 5:11S-up

U+E3B8

accSagittalDoubleSharp711CDown

Double sharp 7:11C-down 9° up [60 EDO] 9/10-tone up

U+E3B9

accSagittalDoubleFlat711CUp

Double flat 7:11C-up 9° down [60 EDO] 9/10-tone down

U+E3BA

accSagittalDoubleSharp55CDown

Double sharp 55C-down 13° up [96 EDO] 13/16-tone up

U+E3BB

accSagittalDoubleFlat55CUp

Double flat 55C-up 13° down [96 EDO] 13/16-tone down

U+E3BC

accSagittalDoubleSharp17CDown

Double sharp 17C-down

U+E3BD

accSagittalDoubleFlat17CUp

Double flat 17C up

U+E3BE

accSagittalDoubleSharp711kDown

Double sharp 7:11k-down

U+E3BF

accSagittalDoubleFlat711kUp

Double flat 7:11k-up

Trojan Sagittal extension (12-EDO relative) accidentals (U+E3C0–U+E3D7)

U+E3C0

accSagittal23CommaUp

23 comma up (23C) 2° up [96 EDO] 1/8-tone up

U+E3C1

accSagittal23CommaDown

23 comma down 2° down [96 EDO] 1/8-tone down

U+E3C2

accSagittal519CommaUp

5:19 comma up (5:19C , 5C plus 19s) 1/20-tone up

U+E3C3

accSagittal519CommaDown

5:19 comma down 1/20-tone down

U+E3C4

accSagittal523SmallDiesisUp

5:23 small diesis up (5:23S, 5C plus 23C) 2° up [60 EDO]

U+E3C5

accSagittal523SmallDiesisDown

5:23 small diesis down 2° down [60 EDO] 1/5-tone down

U+E3C6

accSagittalSharp523SDown

Sharp 5:23S-down 3° up [60 EDO] 3/10-tone up

U+E3C7

accSagittalFlat523SUp

Flat 5:23S-up 3° down [60 EDO] 3/10-tone down

U+E3C8

accSagittalSharp519CDown

Sharp 5:19C-down 9/20-tone up

U+E3C9

accSagittalFlat519CUp

Flat 5:19C-up 9/20-tone down

U+E3CA

accSagittalSharp23CDown

Sharp 23C-down 6° up [96 EDO] 3/8-tone up

U+E3CB

accSagittalFlat23CUp

Flat 23C-up 6° down [96 EDO] 3/8-tone down

U+E3CC

accSagittalSharp23CUp

Sharp 23C-up 10° up [96 EDO] 5/8-tone up

U+E3CD

accSagittalFlat23CDown

Flat 23C-down 10° down [96 EDO] 5/8-tone down

U+E3CE

accSagittalSharp519CUp

Sharp 5:19C-up 11/20-tone up

U+E3CF

accSagittalFlat519CDown

Flat 5:19C-down 11/20-tone down

U+E3D0

accSagittalSharp523SUp

Sharp 5:23S-up 7° up [60 EDO] 7/10-tone up

U+E3D1

accSagittalFlat523SDown

Flat 5:23S-down 7° down [60 EDO] 7/10-tone down

U+E3D2

accSagittalDoubleSharp523SDown

Double sharp 5:23S-down 8° up [60 EDO] 4/5-tone up

U+E3D3

accSagittalDoubleFlat523SUp

Double flat 5:23S-up 8° down [60 EDO] 4/5-tone down

U+E3D4

accSagittalDoubleSharp519CDown

Double sharp 5:19C-down 19/20-tone up

U+E3D5

accSagittalDoubleFlat519CUp

Double flat 5:19C-up 19/20-tone down

U+E3D6

accSagittalDoubleSharp23CDown

Double sharp 23C-down 14°up [96 EDO] 7/8-tone up

U+E3D7

accSagittalDoubleFlat23CUp

Double flat 23C-up 14° down [96 EDO] 7/8-tone down

Implementation notes

The Trojan (or tone-fraction) set is not strictly-speaking an extension of Athenian, as there are a few Athenians (including Spartans) that are not Trojan. Those are the glyphs whose descriptions include “5:7k”, “7:11k”, “5:11S”, “25S” or “11L” and do not include a tone-fraction.

The descriptions below the Sagittal glyphs do not include all possible uses, only a selection of the most common. To determine which of these glyphs to use for tone-fractions not listed here (as well as for JI ratios and degrees of EDOs that are not listed here) please see http://sagittal.org.

Promethean Sagittal extension (high precision) single-shaft accidentals (U+E3D8–U+E3F7)

U+E3D8

accSagittal19SchismaUp

19 schisma up (19s)

U+E3D9

accSagittal19SchismaDown

19 schisma down

U+E3DA

accSagittal17KleismaUp

17 kleisma up (17k)

U+E3DB

accSagittal17KleismaDown

17 kleisma down

U+E3DC

accSagittal143CommaUp

143 comma up (143C, 13L less 11M)

U+E3DD

accSagittal143CommaDown

143 comma down

U+E3DE

accSagittal1149CommaUp

11:49 comma up (11:49C, 11M less 49C)

U+E3DF

accSagittal1149CommaDown

11:49 comma down

U+E3E0

accSagittal19CommaUp

19 comma up (19C)

U+E3E1

accSagittal19CommaDown

19 comma down

U+E3E2

accSagittal719CommaUp

7:19 comma up (7:19C, 7C less 19s)

U+E3E3

accSagittal719CommaDown

7:19 comma down

U+E3E4

accSagittal49SmallDiesisUp

49 small diesis up (49S, ~31S)

U+E3E5

accSagittal49SmallDiesisDown

49 small diesis down

U+E3E6

accSagittal23SmallDiesisUp

23 small diesis up (23S)

U+E3E7

accSagittal23SmallDiesisDown

23 small diesis down

U+E3E8

accSagittal513MediumDiesisUp

5:13 medium diesis up (5:13M, ~37M, 5C plus 13C)

U+E3E9

accSagittal513MediumDiesisDown

5:13 medium diesis down

U+E3EA

accSagittal1119MediumDiesisUp

11:19 medium diesis up (11:19M , 11M plus 19s)

U+E3EB

accSagittal1119MediumDiesisDown

11:19 medium diesis down

U+E3EC

accSagittal49MediumDiesisUp

49 medium diesis up (49M, ~31M, 7C plus 7C)

U+E3ED

accSagittal49MediumDiesisDown

49 medium diesis down

U+E3EE

accSagittal549MediumDiesisUp

5:49 medium diesis up (5:49M, half apotome)

U+E3EF

accSagittal549MediumDiesisDown

5:49 medium diesis down

U+E3F0

accSagittal49LargeDiesisUp

49 large diesis up (49L, ~31L, apotome less 49M)

U+E3F1

accSagittal49LargeDiesisDown

49 large diesis down

U+E3F2

accSagittal1119LargeDiesisUp

11:19 large diesis up (11:19L, apotome less 11:19M)

U+E3F3

accSagittal1119LargeDiesisDown

11:19 large diesis down

U+E3F4

accSagittal513LargeDiesisUp

5:13 large diesis up (5:13L, ~37L , apotome less 5:13M)

U+E3F5

accSagittal513LargeDiesisDown

5:13 large diesis down

Promethean Sagittal extension (high precision) multi-shaft accidentals (U+E3F8–U+E437)

U+E3F8

accSagittalSharp23SDown

Sharp 23S-down

U+E3F9

accSagittalFlat23SUp

Flat 23S-up

U+E3FA

accSagittalSharp49SDown

Sharp 49S-down

U+E3FB

accSagittalFlat49SUp

Flat 49S-up

U+E3FC

accSagittalSharp719CDown

Sharp 7:19C-down

U+E3FD

accSagittalFlat719CUp

Flat 7:19C-up

U+E3FE

accSagittalSharp19CDown

Sharp 19C-down

U+E3FF

accSagittalFlat19CUp

Flat 19C-up

U+E400

accSagittalSharp1149CDown

Sharp 11:49C-down

U+E401

accSagittalFlat1149CUp

Flat 11:49C-up

U+E402

accSagittalSharp143CDown

Sharp 143C-down

U+E403

accSagittalFlat143CUp

Flat 143C-up

U+E404

accSagittalSharp17kDown

Sharp 17k-down

U+E405

accSagittalFlat17kUp

Flat 17k-up

U+E406

accSagittalSharp19sDown

Sharp 19s-down

U+E407

accSagittalFlat19sUp

Flat 19s-up

U+E408

accSagittalSharp19sUp

Sharp 19s-up

U+E409

accSagittalFlat19sDown

Flat 19s-down

U+E40A

accSagittalSharp17kUp

Sharp 17k-up

U+E40B

accSagittalFlat17kDown

Flat 17k-down

U+E40C

accSagittalSharp143CUp

Sharp 143C-up

U+E40D

accSagittalFlat143CDown

Flat 143C-down

U+E40E

accSagittalSharp1149CUp

Sharp 11:49C-up

U+E40F

accSagittalFlat1149CDown

Flat 11:49C-down

U+E410

accSagittalSharp19CUp

Sharp 19C-up

U+E411

accSagittalFlat19CDown

Flat 19C-down

U+E412

accSagittalSharp719CUp

Sharp 7:19C-up

U+E413

accSagittalFlat719CDown

Flat 7:19C-down

U+E414

accSagittalSharp49SUp

Sharp 49S-up

U+E415

accSagittalFlat49SDown

Flat 49S-down

U+E416

accSagittalSharp23SUp

Sharp 23S-up

U+E417

accSagittalFlat23SDown

Flat 23S-down

U+E418

accSagittalSharp513MUp

Sharp 5:13M-up

U+E419

accSagittalFlat513MDown

Flat 5:13M-down

U+E41A

accSagittalSharp1119MUp

Sharp 11:19M-up

U+E41B

accSagittalFlat1119MDown

Flat 11:19M-down

U+E41C

accSagittalSharp49MUp

Sharp 49M-up

U+E41D

accSagittalFlat49MDown

Flat 49M-down

U+E41E

accSagittalSharp549MUp

Sharp 5:49M-up (one and a half apotomes)

U+E41F

accSagittalFlat549MDown

Flat 5:49M down

U+E420

accSagittalSharp49LUp

Sharp 49L-up

U+E421

accSagittalFlat49LDown

Flat 49L-down

U+E422

accSagittalSharp1119LUp

Sharp 11:19L-up

U+E423

accSagittalFlat1119LDown

Flat 11:19L-down

U+E424

accSagittalSharp513LUp

Sharp 5:13L-up

U+E425

accSagittalFlat513LDown

Flat 5:13L-down

U+E428

accSagittalDoubleSharp23SDown

Double sharp 23S-down

U+E429

accSagittalDoubleFlat23SUp

Double flat 23S-up

U+E42A

accSagittalDoubleSharp49SDown

Double sharp 49S-down

U+E42B

accSagittalDoubleFlat49SUp

Double flat 49S-up

U+E42C

accSagittalDoubleSharp719CDown

Double sharp 7:19C-down

U+E42D

accSagittalDoubleFlat719CUp

Double flat 7:19C-up

U+E42E

accSagittalDoubleSharp19CDown

Double sharp 19C-down

U+E42F

accSagittalDoubleFlat19CUp

Double flat 19C-up

U+E430

accSagittalDoubleSharp1149CDown

Double sharp 11:49C-down

U+E431

accSagittalDoubleFlat1149CUp

Double flat 11:49C-up

U+E432

accSagittalDoubleSharp143CDown

Double sharp 143C-down

U+E433

accSagittalDoubleFlat143CUp

Double flat 143C-up

U+E434

accSagittalDoubleSharp17kDown

Double sharp 17k-down

U+E435

accSagittalDoubleFlat17kUp

Double flat 17k-up

U+E436

accSagittalDoubleSharp19sDown

Double sharp 19s-down

U+E437

accSagittalDoubleFlat19sUp

Double flat 19s-up

Sagittal-compatible accidentals (U+E438–U+E447)

U+E438

accSagittalWilsonPlus

Wilson plus (5 comma up)

U+E439

accSagittalWilsonMinus

Wilson minus (5 comma down)

U+E43A

accSagittalNarrowReversedFlat

Narrow reversed flat (quarter-tone flat)

U+E43B

accSagittalNarrowReversedFlatAndFlat

Narrow reversed flat and flat (three-quarter-tones flat)

U+E43C

accSagittalLargeDoubleSharp

Large double sharp

Implementation notes

Other Sagittal-compatible accidentals are the standard double-flat, flat, natural and sharp (U+E2A4, U+E2A0, U+E2A1 and U+E2A2) and the Stein half-sharp and one-and-a-half-sharps (U+E2F2 and U+E2F3).

Herculean Sagittal extension (very high precision) accidental diacritics (U+E448–U+E44F)

U+E448

accSagittalShaftUp

Shaft up (natural for use with only diacritics up)

U+E449

accSagittalShaftDown

Shaft down (natural for use with only diacritics down)

U+E44A

accSagittalAcute

Acute 5 schisma up (5s) 2 cents up

U+E44B

accSagittalGrave

Grave 5 schisma down 2 cents down

Implementation notes

Sagittal diacritics are placed to the left of Sagittal accidentals if required; at most one diacritic from each group. If there are multiple diacritics, those representing the larger alteration are placed closer to the accidental. If diacritics are directly altering the natural note, they should be placed to the left of, but not touching, one of the bare-shaft glyphs (U+E448 or U+E449); whichever one represents the direction of the sum of the diacritic alterations.

Olympian Sagittal extension (extreme precision) accidental diacritics (U+E450–U+E457)

Implementation notes

This range is reserved for the future definition of four glyphs, representing alterations of one and two 455 or 65:77 schismas. These schismas are approximately 0.4 cents.

Magrathean Sagittal extension (insane precision) accidental diacritics (U+E458–U+E47F)

Implementation notes

This range is reserved for the future definition of 38 glyphs, representing alterations of a half to nine-and-a-half tinas. A tina is approximately 0.14 cents.

Other microtonal accidentals (U+E4B0–U+E4BF)

U+E4B0

accidentalXenakisOneThirdSharp

One-third-tone sharp (Xenakis)

U+E4B1

accidentalXenakisTwoThirdsSharp

Two-third-tones sharp (Xenakis)

Arel-Ezgi-Uzdilek (AEU) accidentals (U+E4C0–U+E4C7)

U+E4C0

accidentalBuyukMucennebFlat

Büyük mücenneb (flat)

U+E4C1

accidentalKucukMucennebFlat

Kücük mücenneb (flat)

U+E4C2

accidentalBakiyeFlat

Bakiye (flat)

U+E4C3

accidentalKomaFlat

Koma (flat)

U+E4C4

accidentalKomaSharp

Koma (sharp)

U+E4C5

accidentalBakiyeSharp

Bakiye (sharp)

U+E4C6

accidentalKucukMucennebSharp

Kücük mücenneb (sharp)

U+E4C7

accidentalBuyukMucennebSharp

Büyük mücenneb (sharp)

Turkish folk music accidentals (U+E4C8–U+E4CF)

U+E4C8

accidental1CommaSharp

1-comma sharp

U+E4C9

accidental2CommaSharp

2-comma sharp

U+E4CA

accidental3CommaSharp

3-comma sharp

U+E4CB

accidental5CommaSharp

5-comma sharp

U+E4CC

accidental1CommaFlat

1-comma flat

U+E4CD

accidental2CommaFlat

2-comma flat

U+E4CE

accidental3CommaFlat

3-comma flat

U+E4CF

accidental4CommaFlat

4-comma flat

Persian accidentals (U+E4D0–U+E4D7)

U+E4D0

accidentalKoron

Koron (quarter-flat)

U+E4D1

accidentalSori

Sori (quarter-sharp)

Articulation (U+E4E0–U+E4FF)

U+E4E0 (and U+1D17B)

articAccent

Accent

U+E4E1 (and U+1D17C)

articStaccato

Staccato

U+E4E2 (and U+1D17D)

articTenuto

Tenuto

U+E4E3 (and U+1D17E)

articStaccatissimoAbove

Staccatissimo above

U+E4E4

articStaccatissimoBelow

Staccatissimo below

U+E4E5

articStaccatissimoWedgeAbove

Staccatissimo wedge above

U+E4E6

articStaccatissimoWedgeBelow

Staccatissimo wedge below

U+E4E7

articStaccatissimoStrokeAbove

Staccatissimo stroke above

U+E4E8

articStaccatissimoStrokeBelow

Staccatissimo stroke below

U+E4E9 (and U+1D17F)

articMarcatoAbove

Marcato above

U+E4EA

articMarcatoBelow

Marcato below

U+E4EB (and U+1D180)

articMarcatoStaccatoAbove

Marcato-staccato above

U+E4EC

articMarcatoStaccatoBelow

Marcato-staccato below

U+E4ED (and U+1D181)

articAccentStaccatoAbove

Accent-staccato above

U+E4EE

articAccentStaccatoBelow

Accent-staccato below

U+E4EF (and U+1D182)

articTenutoSlurAbove

Louré (tenuto-staccato) above

U+E4F0

articTenuroSlurBelow

Louré (tenuto-staccato) below

U+E4F1

articStressAbove

Stress above

U+E4F2

articStressBelow

Stress below

U+E4F3

articUnstressAbove

Unstress above

U+E4F4

articUnstressBelow

Unstress below

U+E4F5

articLaissezVibrerAbove

Laissez vibrer (l.v.) above

U+E4F6

articLaissezVibrerBelow

Laissez vibrer (l.v.) below

Recommended stylistic alternates

U+E4E0

articAccentLarge

Large accent

Holds and pauses (U+E500–U+E51F)

U+E500 (and U+1D110)

fermataAbove

Fermata above

U+E501 (and U+1D111)

fermataBelow

Fermata below

U+E502

fermataVeryShortAbove

Very short fermata above

U+E503

fermataVeryShortBelow

Very short fermata below

U+E504

fermataShortAbove

Short fermata above

U+E505

fermataShortBelow

Short fermata below

U+E506

fermataLongAbove

Long fermata above

U+E507

fermataLongBelow

Long fermata below

U+E508

fermataVeryLongAbove

Very long fermata above

U+E509

fermataVeryLongBelow

Very long fermata below

U+E50A (and U+1D112)

breathMark

Breath mark

U+E50B (and U+1D113)

caesura

Caesura

U+E50C

caesuraThick

Thick caesura

U+E50D

caesuraShort

Short caesura

U+E50E

breathMarkSalzedo

Breath mark (Salzedo)

Rests (U+E520–U+E53F)

U+E520

restLonga

Longa rest

U+E521 (and U+1D13A)

restDoubleWhole

Double whole (breve) rest

U+E522 (and U+1D13B)

restWhole

Whole (semibreve) rest

U+E523 (and U+1D13C)

restHalf

Half (minim) rest

U+E524 (and U+1D13D)

restQuarter

Quarter (crotchet) rest

U+E525 (and U+1D13E)

rest8th

Eighth (quaver) rest

U+E526 (and U+1D13F)

rest16th

16th (semiquaver) rest

U+E527 (and U+1D140)

rest32nd

32nd (demisemiquaver) rest

U+E528 (and U+1D141)

rest64th

64th (hemidemisemiquaver) rest

U+E529 (and U+1D142)

rest128th

128th (semihemidemisemiquaver) rest

U+E52A

rest256th

256th rest

U+E52B

rest512th

512th rest

U+E52C

rest1024th

1024th rest

U+E52D (and U+1D129)

restHBar

Multiple measure rest

U+E52E

restHBarLeft

H-bar, left half

U+E52F

restHBarRight

H-bar, right half

U+E530

restQuarterOld

Old-style quarter (crotchet) rest

Implementation notes

Scoring applications should draw multiple measure rests using primitives to provide variable width and line thickness rather than using U+E52D.

"Old style" multiple measure rests can be created by laying out U+E520 (four bars), U+E521 (two bars) and U+E522 (one bar) next to each other.

Bar repeats (U+E540–U+E54F)

U+E540 (and U+1D10E)

repeat1Bar

Repeat last bar

U+E541 (and U+1D10F)

repeat2Bars

Repeat last two bars

U+E542

repeat4Bars

Repeat last four bars

Octaves (U+E550–U+E55F)

U+E550

ottava

Ottava

U+E551 (and U+1D136)

ottavaAlta

Ottava alta

U+E552 (and U+1D137)

ottavaBassa

Ottava bassa

U+E553

ottavaBassaBa

Ottava bassa (ba)

U+E554

quindicesima

Quindicesima

U+E555 (and U+1D138)

quindicesimaAlta

Quindicesima alta

U+E556 (and U+1D139)

quindicesimaBassa

Quindicesima bassa

U+E557

ventiduesima

Ventiduesima

U+E558

ventiduesimaAlta

Ventiduesima alta

U+E559

ventiduesimaBassa

Ventiduesima bassa

Implementation notes

See the implementation notes for clefs (U+E060–U+E08F).

Dynamics (U+E560–U+E58F)

U+E560 (and U+1D18F)
dynamicPiano
Piano

U+E561 (and U+1D190)
dynamicMezzo
Mezzo

U+E562 (and U+1D191)
dynamicForte
Forte

U+E563 (and U+1D18C)
dynamicRinforzando
Rinforzando

U+E564 (and U+1D18D)
dynamicSubito
Subito

U+E565 (and U+1D18E)
dynamicZ
Z

U+E566
dynamicNiente
Niente

U+E567
dynamicPPPPPP
pppppp

U+E568
dynamicPPPPP
ppppp

U+E569
dynamicPPPP
pppp

U+E56A
dynamicPPP
ppp

U+E56B
dynamicPP
pp

U+E56C
dynamicMP
mp

U+E56D
dynamicMF
mf

U+E56E
dynamicFF
ff

U+E56F
dynamicFFF
fff

U+E570
dynamicFFFF
ffff

U+E571
dynamicFFFFF
fffff

U+E572

dynamicFFFFFF

ffffff

U+E573

dynamicFortePiano

Forte-piano

U+E574

dynamicForzando

Forzando

U+E575

dynamicSforzando

Sforzando

U+E576

dynamicSforzandoPiano

Sforzando-piano

U+E577

dynamicSforzandoPianissimo

Sforzando-pianissimo

U+E578

dynamicSforzato

Sforzato

U+E579

dynamicSforzatoFF

Sforzatissimo

U+E57A

dynamicRinforzando1

Rinforzando 1

U+E57B

dynamicRinforzando2

Rinforzando 2

U+E57C (and U+1D192)

dynamicCrescendoHairpin

Crescendo

U+E57D (and U+1D193)

dynamicDiminuendoHairpin

Diminuendo

U+E57E

dynamicNienteForHairpin

Niente (for hairpins)

Implementation notes

Scoring applications should draw *crescendo* and *diminuendo* hairpins using primitives rather than U+E57C and U+E57D in order to provide variable width, line thickness, angle and aperture.

Ligatures should be defined for common combinations of dynamics, such as  . Special attention should be paid to kerning pairs for these glyphs.

Scoring applications may choose to draw dynamics either using multiple glyphs (e.g. 3 x U+E562 for fff) or using the pre-composed glyph (e.g. 1 x U+E570 for fff).

Common ornaments (U+E590–U+E59F)

U+E590 (and U+1D194)

graceNoteAcciaccaturaStemUp

Slashed grace note stem up

U+E591

graceNoteAcciaccaturaStemDown

Slashed grace note stem down

U+E592 (and U+1D195)

graceNoteAppoggiaturaStemUp

Grace note stem up

U+E593

graceNoteAppoggiaturaStemDown

Grace note stem down

U+E594

graceNoteSlashStemUp

Slash for stem up grace note

U+E595

graceNoteSlashStemDown

Slash for stem down grace note

U+E596 (and U+1D196)

ornamentTrill

Trill

U+E597 (and U+1D197)

ornamentTurn

Turn

U+E598 (and U+1D198)

ornamentTurnInverted

Inverted turn

U+E599 (and U+1D199)

ornamentTurnSlash

Turn with slash

U+E59A (and U+1D19A)

ornamentTurnUp

Turn up

U+E59B

ornamentTurnUpS

Inverted turn up

U+E59C

ornamentMordent

Mordent

U+E59D

ornamentMordentInverted

Inverted mordent

U+E59E

ornamentTremblement

Tremblement

Implementation notes

Scoring applications should draw grace notes in the same way as they draw regular notes, rather than using the precomposed glyphs (U+E59A and U+E59B).

Likewise, scoring applications should draw *glissandi* using multiple instances of a wiggly line segment (e.g. U+EA8F), not the precomposed glyphs, to provide variable length and angle.

Other baroque ornaments (U+E5A0–U+E5B9)

U+E5A0

ornamentPortDeVoixV

Port de voix

U+E5A1

ornamentRightFacingHalfCircle

Right-facing half circle

U+E5A2

ornamentLeftFacingHalfCircle

Left-facing half circle

U+E5A3

ornamentRightFacingHook

Right-facing hook

U+E5A4

ornamentLeftFacingHook

Left-facing hook

U+E5A5

ornamentHookBeforeNote

Hook before note

U+E5A6

ornamentHookAfterNote

Hook after note

U+E5A7

ornamentUpCurve

Curve above

U+E5A8

ornamentDownCurve

Curve below

U+E5A9

ornamentShortObliqueLineBeforeNote

Short oblique straight line SW-NE

U+E5AA

ornamentShortObliqueLineAfterNote

Short oblique straight line NW-SE

U+E5AB

ornamentObliqueLineBeforeNote

Oblique straight line SW-NE

U+E5AC

ornamentObliqueLineAfterNote

Oblique straight line NW-SE

U+E5AD

ornamentDoubleObliqueLinesBeforeNote

Double oblique straight lines SW-NE

U+E5AE

ornamentDoubleObliqueLinesAfterNote

Double oblique straight lines NW-SE

U+E5AF

ornamentObliqueLineHorizBeforeNote

Oblique straight line tilted SW-NE

U+E5B0

ornamentObliqueLineHorizAfterNote

Oblique straight line tilted NW-SE

U+E5B1

ornamentComma

Comma

U+E5B2

ornamentShake3

Shake

U+E5B3

ornamentVerticalLine

Vertical line

U+E5B4

ornamentShakeMuffat1

Shake (Muffat)

U+E5B5

ornamentHaydn

Haydn ornament

U+E5B6 (and U+1D1B1)

glissandoUp

Glissando up

U+E5B7 (and U+1D1B2)

glissandoDown

Glissando down

U+E5B8

ornamentSchleifer

Schleifer (long mordent)

Implementation notes

There is little agreement over the meaning, or indeed the naming, of ornaments beyond those that have survived into modern usage. The glyphs included in this range are the shapes that are used by a wide variety of composers, particularly in the baroque period. For information about the uses and interpretations of individual symbols in this range, consult Neumann (*ibid.*).

Combining strokes for trills and mordents (U+E5BA–U+E5D2)

U+E5BA

ornamentTopLeftConcaveStroke

Ornament top left concave stroke

U+E5BB (and U+1D1A5)

ornamentTopLeftConvexStroke

Ornament top left convex stroke

U+E5BC

ornamentHighLeftConcaveStroke

Ornament high left concave stroke

U+E5BD (and U+1D1A2)

ornamentHighLeftConvexStroke

Ornament high left convex stroke

U+E5BE (and U+1D19B)

ornamentLeftVerticalStroke

Ornament left vertical stroke

U+E5BF

ornamentLeftVerticalStrokeWithCross

Ornament left vertical stroke with cross (+)

U+E5C0

ornamentLeftShakeT

Ornament left shake t

U+E5C1

ornamentLeftPlus

Ornament left +

U+E5C2

ornamentLowLeftConcaveStroke

Ornament low left concave stroke

U+E5C3 (and U+1D1A4)

ornamentLowLeftConvexStroke

Ornament low left convex stroke

U+E5C4

ornamentBottomLeftConcaveStroke

Ornament bottom left concave stroke

U+E5C5 (and U+1D1A1)

ornamentBottomLeftConcaveStrokeLarge

Ornament bottom left concave stroke, large

U+E5C6

ornamentBottomLeftConvexStroke

Ornament bottom left convex stroke

U+E5C7 (and U+1D19C)

ornamentZigZagLineNoRightEnd

Ornament zig-zag line without right-hand end

U+E5C8 (and U+1D19D)

ornamentZigZagLineWithRightEnd

Ornament zig-zag line with right-hand end

U+E5C9 (and U+1D1A0)

ornamentMiddleVerticalStroke

Ornament middle vertical stroke

U+E5CA

ornamentTopRightConcaveStroke

Ornament top right concave stroke

U+E5CB (and U+1D19E)

ornamentTopRightConvexStroke

Ornament top right convex stroke

U+E5CC

ornamentHighRightConcaveStroke

Ornament high right concave stroke

U+E5CD

ornamentHighRightConvexStroke

Ornament high right convex stroke

U+E5CE

ornamentRightVerticalStroke

Ornament right vertical stroke

U+E5CF (and U+1D1A3)

ornamentLowRightConcaveStroke

Ornament low right concave stroke

U+E5D0

ornamentLowRightConvexStroke

Ornament low right convex stroke

U+E5D1 (and U+1D19F)

ornamentBottomRightConcaveStroke

Ornament bottom right concave stroke

U+E5D2

ornamentBottomRightConvexStroke

Ornament bottom right convex stroke

Implementation notes

When designing the Unicode Musical Symbols range, Perry Roland elected to develop a scheme for creating complex ornaments using a series of glyphs rather than defining precomposed glyphs for every ornament, as shown below:[15]

[15] *Ibid.*, Allen, page 539.

	1D19C STROKE-2 + 1D19D STROKE-3
	1D19C STROKE-2 + 1D1A0 STROKE-6 + 1D19D STROKE-3
	1D1A0 STROKE-6 + 1D19C STROKE-2 + 1D19C STROKE-2 + 1D19D STROKE-3
	1D19C STROKE-2 + 1D19C STROKE-2 + 1D1A0 STROKE-6 + 1D19D STROKE-3
	1D19C STROKE-2 + 1D19C STROKE-2 + 1D1A3 STROKE-9
	1D1A1 STROKE-7 + 1D19C STROKE-2 + 1D19C STROKE-2 + 1D19D STROKE-3
	1D1A2 STROKE-8 + 1D19C STROKE-2 + 1D19C STROKE-2 + 1D19D STROKE-3
	1D19C STROKE-2 + 1D19C STROKE-2 + 1D19D STROKE-3 + 1D19F STROKE-5
	1D1A1 STROKE-7 + 1D19C STROKE-2 + 1D19C STROKE-2 + 1D1A0 STROKE-6 + 1D19D STROKE-3
	1D1A1 STROKE-7 + 1D19C STROKE-2 + 1D19C STROKE-2 + 1D19D STROKE-3 + 1D19F STROKE-5
	1D1A2 STROKE-8 + 1D19C STROKE-2 + 1D19C STROKE-2 + 1D1A0 STROKE-6 + 1D19D STROKE-3
	1D19B STROKE-1 + 1D19C STROKE-2 + 1D19C STROKE-2 + 1D19D STROKE-3
	1D19B STROKE-1 + 1D19C STROKE-2 + 1D19C STROKE-2 + 1D19D STROKE-3 + 1D19E STROKE-4
	1D19C STROKE-2 + 1D19D STROKE-3 + 1D19E STROKE-4

This range expands upon the repertoire of 11 strokes in the Unicode Musical Symbols range.

The side-bearings for the glyphs in this range must be adjusted carefully to ensure correct positioning. (Kerning pairs may also be used.)

Glyphs between U+E5BA and U+E5C6 are designed to be positioned immediately to the left of and to join seamlessly to U+E5C7. U+E5C8 and glyphs between U+E5CA and U+E5D2 are designed to be positioned immediately to the right of and to join seamlessly to U+E5C7. U+E5C9 should be used immediately to the left of either U+E5C7 or U+E5C8 to provide correct positioning of the vertical stroke across the zig-zag line.

Precomposed trills and mordents (U+E5D3–U+E5DF)

U+E5D3

ornamentPrecompSlide

Slide

U+E5D4

ornamentPrecompDescendingSlide

Descending slide

U+E5D5

ornamentPrecompAppoggTrill

Supported appoggiatura trill

U+E5D6

ornamentPrecompAppoggTrillSuffix

Supported appoggiatura trill with two-note suffix

U+E5D7

ornamentPrecompTurnTrillDAnglebert

Turn-trill (D'Anglebert)

U+E5D8

ornamentPrecompSlideTrillDAnglebert

Slide-trill (D'Anglebert)

U+E5D9

ornamentPrecompSlideTrillMarpurg

Slide-trill with one-note suffix (Marpurg)

U+E5DA

ornamentPrecompTurnTrillBach

Turn-trill with two-note suffix (J.S. Bach)

U+E5DB

ornamentPrecompSlideTrillBach

Slide-trill with two-note suffix (J.S. Bach)

U+E5DC

ornamentPrecompSlideTrillMuffat

Slide-trill (Muffat)

U+E5DD

ornamentPrecompSlideTrillSuffixMuffat

Slide-trill with two-note suffix (Muffat)

U+E5DE

ornamentPrecompTrillSuffixDandrieu

Trill with two-note suffix (Dandrieu)

U+E5DF

ornamentPrecompPortDeVoixMordent

Pre-beat port de voix follwed by multiple mordent (Dandrieu)

Implementation notes

The glyphs in this range show how the glyphs in the preceding range can be combined, based on examples from the "Selective Glossary of Terms and Symbols" in Neumann (*ibid.*).

- U+E5D3 = U+E5C7 + U+E5C7 + U+E5CC
- U+E5D4 = U+E5C7 + U+E5C7 + U+E5D2

- U+E5D5 = U+E5BE + U+E5C7 + U+E5C7 + U+E5C8
- U+E5D6 = U+E5B6 + U+E5C7 + U+E5C7 + U+E5CE
- U+E5D7 = U+E5BD + U+E5C7 + U+E5C7 + U+E5C7 + U+E5CA
- U+E5D8 = U+E5C5 + U+E5C7 + U+E5C8
- U+E5D9 = U+E5C5 + U+E5C7 + U+E5C7 + U+E5CB
- U+E5DA = U+E5BD + U+E5C7 + U+E5C7 + U+E5C7 + U+E5C9 + U+E5C8
- U+E5DB = U+E5C4 + U+E5C7 + U+E5C7 + U+E5C9 + U+E5C8
- U+E5DC = U+E5C6 + U+E5C7 + U+E5C7 + U+E5CA
- U+E5DD = U+E5C6 + U+E5C7 + U+E5C7 + U+E5CB
- U+E5DE = U+E5C7 + U+E5C7 + U+E5C7 + U+E5C8
- U+E5DF = U+E5C2 + U+E5C7 + U+E5C7 + U+E5C9 + U+E5C8

Brass techniques (U+E5E0–U+E60F)

U+E5E0

brassScoop

Scoop

U+E5E1

brassLiftShort

Lift, short

U+E5E2

brassLiftMedium

Lift, medium

U+E5E3

brassLiftLong

Lift, long

U+E5E4 (and U+1D185)

brassDoitShort

Doit, short

U+E5E5

brassDoitMedium

Doit, medium

U+E5E6

brassDoitLong

Doit, long

U+E5E7 (and U+1D186)

brassFallLipShort

Lip fall, short

U+E5E8

brassFallLipMedium

Lip fall, medium

U+E5E9

brassFallLipLong

Lip fall, long

U+E5EA

brassFallSmoothShort

Smooth fall, short

U+E5EB

brassFallSmoothMedium

Smooth fall, medium

U+E5EC

brassFallSmoothLong

Smooth fall, long

U+E5ED

brassFallRoughShort

Rough fall, short

U+E5EE

brassFallRoughMedium

Rough fall, medium

U+E5EF

brassFallRoughLong

Rough fall, long

U+E5F0

brassPlop

Plop

U+E5F1 (and U+1D187)

brassFlip

Flip

U+E5F2 (and U+1D188)

brassSmear

Smear

U+E5F3 (and U+1D189)

brassBend

Bend

U+E5F4

brassJazzTurn

Jazz turn

U+E5F5

brassMuteClosed

Muted (closed)

U+E5F6

brassMuteHalfClosed

Half-muted (half-closed)

U+E5F7

brassMuteOpen

Open

U+E5F8

brassHarmonMuteClosed

Harmon mute, closed

U+E5F9

brassHarmonMuteStemHalfLeft

Harmon mute, stem-cup half-closed, left

U+E5FA

brassHarmonMuteStemHalfRight

Harmon mute, stem-cup half-closed, right

U+E5FB

brassHarmonMuteStemOpen

Harmon mute, stem-cup open

Wind techniques (U+E610–U+E63F)

U+E610 (and U+1D18A)

doubleTongueAbove

Double-tongue above

U+E611

doubleTongueBelow

Double-tongue below

U+E612 (and U+1D18B)

tripleTongueAbove

Triple-tongue above

U+E613

tripleTongueBelow

Triple-tongue below

U+E614

windClosedHole

Closed hole

U+E615

windThreeQuartersClosedHole

Three-quarters closed hole

U+E616

windHalfClosedHole1

Half-closed hole

U+E617

windHalfClosedHole2

Half-closed hole 2

U+E618

windHalfClosedHole3

Half-open hole

U+E619

windOpenHole

Open hole

U+E61A

windTrillKey

Trill key

U+E61B

windFlatEmbouchure

Sharper embouchure

U+E61C

windSharpEmbouchure

Flatter embouchure

U+E61D

windRelaxedEmbouchure

Relaxed embouchure

U+E61E

windLessRelaxedEmbouchure

Somewhat relaxed embouchure

U+E61F

windTightEmbouchure

Tight embouchure

U+E620

windLessTightEmbouchure

Somewhat tight embouchure

U+E621

windVeryTightEmbouchure

Very tight embouchure

U+E622

windVeryRelaxedEmbouchure

Very relaxed embouchure / weak air-pressure

U+E624

windReedPositionNormal

Normal reed position

U+E625

windReedPositionOut

Very little reed (pull outwards)

U+E626

windReedPositionIn

Much more reed (push inwards)

U+E627

windMultiphonicsBlackStem

Combining multiphonics (black) for stem

U+E628

windMultiphonicsWhiteStem

Combining multiphonics (white) for stem

U+E629

windMultiphonicsBlackWhiteStem

Combining multiphonics (black and white) for stem

Recommended stylistic alternates

U+E610

doubleTongueAboveNoSlur

Double-tongue above (no slur)

U+E611

doubleTongueBelowNoSlur

Double-tongue below (no slur)

U+E612

tripleTongueAboveNoSlur

Triple-tongue above (no slur)

U+E613

tripleTongueBelowNoSlur

Triple-tongue below (no slur)

String techniques (U+E640–U+E65F)

U+E640 (and U+1D1AA)

stringsDownBow

Down bow

U+E641 (and U+1D1AB)

stringsUpBow

Up bow

U+E642 (and U+1D1AC)

stringsHarmonic

Harmonic

U+E643

stringsHalfHarmonic

Half-harmonic

U+E644

stringsMuteOn

Mute on

U+E645

stringsMuteOff

Mute off

U+E646

stringsBowBehindBridge

Bow behind bridge (sul ponticello)

U+E647

stringsBowOnBridge

Bow on top of bridge

U+E648

stringsBowOnTailpiece

Bow on tailpiece

U+E649

stringsOverpressureDownBow

Overpressure, down bow

U+E64A

stringsOverpressureUpBow

Overpressure, up bow

U+E64B

stringsOverpressurePossibileDownBow

Overpressure possibile, down bow

U+E64C

stringsOverpressurePossibileUpBow

Overpressure possibile, up bow

U+E64D

stringsOverpressureNoDirection

Overpressure, no bow direction

U+E64E

stringsJeteAbove

Jeté (gettato) above

U+E64F

stringsJeteBelow

Jeté (gettato) below

U+E650

stringsFouetté

Fouetté

U+E651

stringsVibratoPulse

Vibrato pulse accent (Saunders) for stem

U+E652

stringsThumbPosition

♀ Thumb position

U+E653

stringsChangeBowDirection

(⊓V) Change bow direction, indeterminate

U+E654

stringsThumbPizzicato

+ Thumb pizzicato

Implementation notes

Scoring applications should not use the precomposed glyphs that include stems (U+E240–U+E25F) but instead draw the stems using primitives and impose the symbols upon them to ensure optimal positioning.

Plucked techniques (U+E660–U+E67F)

U+E660 (and U+1D1AD)

pluckedSnapPizzicatoBelow

Snap pizzicato below

U+E661

pluckedSnapPizzicatoAbove

Snap pizzicato above

U+E662

pluckedBuzzPizzicato

Buzz pizzicato

U+E663 (and U+1D183)

arpeggiatoUp

Arpeggiato up

U+E664 (and U+1D184)

arpeggiatoDown

Arpeggiato down

U+E665 (and U+1D1B3)

pluckedWithFingernails

With fingernails

U+E666

pluckedFingernailFlick

Fingernail flick

U+E667 (and U+1D1B4)

pluckedDamp

Damp

U+E668 (and U+1D1B5)

pluckedDampAll

Damp all

U+E669

pluckedPlectrum

Plectrum

U+E66A

pluckedDampOnStem

Damp (on stem)

Recommended stylistic alternates

U+E660

pluckedSnapPizzicatoBelowGerman

Snap pizzicato below (German)

U+E661

pluckedSnapPizzicatoAboveGerman

Snap pizzicato above (German)

Implementation notes

Scoring applications should draw arpeggiato markings using multiple instances of the appropriate wiggly line segment glyphs (U+EA89–U+EA8E) rather than the precomposed glyphs (U+E663 and U+E664) to allow variable length.

Vocal techniques (U+E680–U+E69F)

U+E680

vocalBreathMark

Breath mark

U+E681

vocalMouthClosed

Mouth closed

U+E682

vocalMouthSlightlyOpen

Mouth slightly open

U+E683

vocalMouthOpen

Mouth open

U+E684

vocalMouthWideOpen

Mouth wide open

U+E685

vocalMouthPursed

Mouth pursed

U+E686

vocalSprechgesang

Sprechgesang

U+E687

vocalsSussurando

Combining sussurando for stem

Keyboard techniques (U+E6A0–U+E6BF)

U+E6A0 (and U+1D1AE)

keyboardPedalPed

Pedal mark

U+E6A1

keyboardPedalP

Pedal P

U+E6A2 (and U+1D1AF)

keyboardPedalUp

Pedal up mark

U+E6A3 (and U+1D1B0)

keyboardPedalHalf

Half-pedal mark

U+E6A4

keyboardPedalUpNotch

Pedal up notch

U+E6A5

keyboardPedalSost

Sostenuto pedal mark

U+E6A6

keyboardPedalS

Pedal S

U+E6A7

keyboardPedalHalf2

Half pedal mark 1

U+E6A8

keyboardPedalHalf3

Half pedal mark 2

U+E6A9

keyboardPedalUpSpecial

Pedal up special

U+E6AA

keyboardLeftPedalPictogram

Left pedal pictogram

U+E6AB

keyboardMiddlePedalPictogram

Middle pedal pictogram

U+E6AC

keyboardRightPedalPictogram

Right pedal pictogram

U+E6AD

keyboardPedalHeel1

Pedal heel 1

U+E6AE

keyboardPedalHeel2

Pedal heel 2

U+E6AF

keyboardPedalToe1

Pedal toe 1

U+E6B0

keyboardPedalToe2

Pedal toe 2

U+E6B1

keyboardPluckInside

Pluck strings inside piano (Maderna)

Recommended stylistic alternates

U+E6A0

keyboardPedalPedNoDot

Pedal mark (no dot)

U+E6A1

keyboardPedalSostNoDot

Sostenuto pedal mark (no dot)

Harp techniques (U+E6C0–U+E6DF)

U+E6C0

harpPedalRaised

Harp pedal raised (flat)

U+E6C1

harpPedalCentered

Harp pedal centered (natural)

U+E6C2

harpPedalLowered

Harp pedal lowered (sharp)

U+E6C3

harpPedalDivider

Harp pedal divider

U+E6C4

harpSalzedoSlideWithSuppleness

Slide with suppleness (Salzedo)

U+E6C5

harpSalzedoOboicFlux

Oboic flux (Salzedo)

U+E6C6

harpSalzedoThunderEffect

Thunder effect (Salzedo)

U+E6C7

harpSalzedoWhistlingSounds

Whistling sounds (Salzedo)

U+E6C8

harpSalzedoMetallicSounds

Metallic sounds (Salzedo)

U+E6C9

harpSalzedoTamTamSounds

Tam-tam sounds (Salzedo)

U+E6CA

harpSalzedoPlayUpperEnd

Play at upper end of strings (Salzedo)

U+E6CB

harpSalzedoTimpanicSounds

Timpanic sounds (Salzedo)

U+E6CC

harpSalzedoMuffleTotally

Muffle totally (Salzedo)

U+E6CD

harpSalzedoFluidicSoundsLeft

Fluidic sounds, left hand (Salzedo)

U+E6CE

harpSalzedoFluidicSoundsRight

Fluidic sounds, right hand (Salzedo)

U+E6CF

harpMetalRod

Metal rod pictogram

U+E6D0

harpTuningKey

Tuning key pictogram

Implementation notes

U+E6CD and U+E6CE are similar in function to noteheads, and should be positioned relative to note stems in the same way.

U+E6C5 and U+E6CA may be repeated to create a continuing line, indicating the duration of the technique.

Tuned mallet percussion pictograms (U+E6E0–U+E6FF)

U+E6E0

pictGlsp

Glockenspiel

U+E6E1

pictXyl

Xylophone

U+E6E2

pictMar

Marimba

U+E6E3

pictVib

Vibraphone

U+E6E4

pictEmptyTrap

Empty trapezoid

U+E6E5

pictGlspSmithBrindle

Glockenspiel (Smith Brindle)

U+E6E6

pictXylSmithBrindle

Xylophone (Smith Brindle)

U+E6E7

pictMarSmithBrindle

Marimba (Smith Brindle)

U+E6E8

pictVibSmithBrindle

Vibraphone (Smith Brindle)

U+E6E9

pictCrotales

Crotales

Chimes pictograms (U+E700–U+E70F)

U+E700

pictTubularBells

Tubular bells

U+E701

pictWindChimesGlass

Wind chimes (glass)

U+E702

pictChimes

Chimes

Drums pictograms (U+E710–U+E72F)

U+E710

pictTimpani

Timpani

U+E711

pictSnareDrum

Snare drum

U+E712

pictSnareDrumSnaresOff

Snare drum, snares off

U+E713

pictSnareDrumMilitary

Military snare drum

U+E714

pictBassDrum

Bass drum

U+E715

pictBassDrumOnSide

Bass drum on side

U+E716

pictTenorDrum

Tenor drum

U+E717

pictTomTom

Tom-tom

U+E718

pictTambourine

Tambourine

U+E719

pictTimbales

Timbales

U+E71A

pictBongos

Bongos

U+E71B

pictConga

Conga

U+E71C

pictLogDrum

Log drum

U+E71D

pictSlitDrum

Slit drum

U+E71E

pictBrakeDrum

Brake drum

U+E71F

pictGobletDrum

Goblet drum (djembe, dumbek)

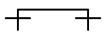
U+E720

pictTabla

Indian tabla

Recommended stylistic alternates

U+E718



pictTambourineStockhausen

Tambourine (Stockhausen)

Wooden struck or scraped percussion pictograms (U+E730–U+E74F)

U+E730

pictWoodBlock

Wood block

U+E731

pictTempleBlocks

Temple blocks

U+E732

pictClaves

Claves

U+E733

pictGuiro

Guiro

U+E734

pictRatchet

Ratchet

U+E735

pictFootballRattle

Football rattle

U+E736

pictWhip

Whip

U+E737

pictBoardClapper

Board clapper

U+E738

pictCastanets

Castanets

Recommended stylistic alternates

U+E738

pictCastanetsSmithBrindle

Castanets (Smith Brindle)

Metallic struck percussion pictograms (U+E750–U+E75F)

U+E750

pictTriangle

Triangle

U+E751

pictAnvil

Anvil

Bells pictograms (U+E760–U+E76F)

U+E760

pictSleighBell

Sleigh bell

U+E761

pictCowBell

Cow bell

U+E762

pictAlmglocken

Almglocken

U+E763

pictBellPlate

Bell plate

U+E764

pictBell

Bell

U+E765

pictHandbell

Handbell

Recommended stylistic alternates

U+E760

pictSleighBellSmithBrindle

Sleigh bell (Smith Brindle)

U+E761

pictCowBellBerio

Cow bell (Berio)

Cymbals pictograms (U+E770–U+E77F)

U+E770

pictCrashCymbals

Crash cymbals

U+E771

pictSuspendedCymbal

Suspended cymbal

U+E772

pictHiHat

Hi-hat

U+E773

pictHiHatOnStand

Hi-hat cymbals on stand

U+E774

pictSizzleCymbal

Sizzle cymbal

U+E775

pictVietnameseHat

Vietnamese hat cymbal

U+E776

pictChineseCymbal

Chinese cymbal

U+E777

pictFingerCymbals

Finger cymbals

U+E778

pictCymbalTongs

Cymbal tongs

U+E779

pictBellOfCymbal

Edge of cymbal

U+E77A

pictEdgeOfCymbal

Bell of cymbal

Gongs pictograms (U+E790–U+E79F)

U+E790

pictTamTam

Tam-tam

U+E791

pictTamTamWithBeater

Tam-tam with beater (Smith Brindle)

U+E792

pictGong

Gong

U+E793

pictGongWithButton

Gong with button (nipple)

U+E794

pictSlideBrushOnGong

Slide brush on gong

Shakers or rattles pictograms (U+E7A0–E7AF)

U+E7A0

pictFlexatone

Flexatone

U+E7A1

pictMaraca

Maraca

U+E7A2

pictMaracas

Maracas

U+E7A3

pictCabasa

Cabasa

U+E7A4

pictThundersheet

Thundersheet

U+E7A5

pictVibraslap

Vibraslap

U+E7A6

pictSistrum

Sistrum

U+E7A7

pictRainstick

Rainstick

Recommended stylistic alternates

U+E7A1

pictMaracaSmithBrindle

Maraca (Smith Brindle)

Whistles and aerophones pictograms (U+E7B0–U+E7CF)

U+E7B0

pictSlideWhistle

Slide whistle

U+E7B1

pictBirdWhistle

Bird whistle

U+E7B2

pictPoliceWhistle

Police whistle

U+E7B3

pictSiren

Siren

U+E7B4

pictWindMachine

Wind machine

U+E7B5

pictCarHorn

Car horn

U+E7B6

pictKlaxonHorn

Klaxon horn

U+E7B7

pictDuckCall

Duck call

U+E7B8

pictWindWhistle

Wind whistle (or mouth siren)

U+E7B9

pictMegaphone

Megaphone

Miscellaneous percussion instrument pictograms (U+E7D0–U+E7DF)

U+E7D0

pictPistolShot

Pistol shot

U+E7D1

pictCannon

Cannon

U+E7D2

pictSandpaperBlocks

Sandpaper blocks

U+E7D3

pictLionsRoar

Lion's roar

Beaters pictograms (U+E7E0–U+E85F)

U+E7E0

pictBeaterSoftXylophoneUp

Soft xylophone stick up

U+E7E1

pictBeaterSoftXylophoneDown

Soft xylophone stick down

U+E7E2

pictBeaterSoftXylophoneRight

Soft xylophone stick right

U+E7E3

pictBeaterSoftXylophoneLeft

Soft xylophone stick left

U+E7E4

pictBeaterMediumXylophoneUp

Medium xylophone stick up

U+E7E5

pictBeaterMediumXylophoneDown

Medium xylophone stick down

U+E7E6

pictBeaterMediumXylophoneRight

Medium xylophone stick right

U+E7E7

pictBeaterMediumXylophoneLeft

Medium xylophone stick left

U+E7E8

pictBeaterHardXylophoneUp

Hard xylophone stick up

U+E7E9

pictBeaterHardXylophoneDown

Hard xylophone stick down

U+E7EA

pictBeaterHardXylophoneRight

Hard xylophone stick right

U+E7EB

pictBeaterHardXylophoneLeft

Hard xylophone stick left

U+E7EC

pictBeaterWoodXylophoneUp

Wood xylophone stick up

U+E7ED

pictBeaterWoodXylophoneDown

Wood xylophone stick down

U+E7EE

pictBeaterWoodXylophoneRight

Wood xylophone stick right

U+E7EF

pictBeaterWoodXylophoneLeft

Wood xylophone stick left

U+E7F0

pictBeaterSoftGlockenspielUp

Soft glockenspiel stick up

U+E7F1

pictBeaterSoftGlockenspielDown

Soft glockenspiel stick down

U+E7F2

pictBeaterSoftGlockenspielRight

Soft glockenspiel stick right

U+E7F3

pictBeaterSoftGlockenspielLeft

Soft glockenspiel stick left

U+E7F4

pictBeaterHardGlockenspielUp

Hard glockenspiel stick up

U+E7F5

pictBeaterHardGlockenspielDown

Hard glockenspiel stick down

U+E7F6

pictBeaterHardGlockenspielRight

Hard glockenspiel stick right

U+E7F7

pictBeaterHardGlockenspielLeft

Hard glockenspiel stick left

U+E7F8

pictBeaterSoftTimpaniUp

Soft timpani stick up

U+E7F9

pictBeaterSoftTimpaniDown

Soft timpani stick down

U+E7FA

pictBeaterSoftTimpaniRight

Soft timpani stick right

U+E7FB

pictBeaterSoftTimpaniLeft

Soft timpani stick left

U+E7FC

pictBeaterMediumTimpaniUp

Medium timpani stick up

U+E7FD

pictBeaterMediumTimpaniDown

Medium timpani stick down

U+E7FE

pictBeaterMediumTimpaniRight

Medium timpani stick right

U+E7FF

pictBeaterMediumTimpaniLeft

Medium timpani stick left

U+E800

pictBeaterHardTimpaniUp

Hard timpani stick up

U+E801

pictBeaterHardTimpaniDown

Hard timpani stick down

U+E802

pictBeaterHardTimpaniRight

Hard timpani stick right

U+E803

pictBeaterHardTimpaniLeft

Hard timpani stick left

U+E804

pictBeaterWoodTimpaniUp

Wood timpani stick up

U+E805

pictBeaterWoodTimpaniDown

Wood timpani stick down

U+E806

pictBeaterWoodTimpaniRight

Wood timpani stick right

U+E807

pictBeaterWoodTimpaniLeft

Wood timpani stick left

U+E808

pictBeaterSoftBassDrumUp

Soft bass drum stick up

U+E809

pictBeaterSoftBassDrumDown

Soft bass drum stick down

U+E80A

pictBeaterMediumBassDrumUp

Medium bass drum stick up

U+E80B

pictBeaterMediumBassDrumDown

Medium bass drum stick down

U+E80C

pictBeaterHardBassDrumUp

Hard bass drum stick up

U+E80D

pictBeaterHardBassDrumDown

Hard bass drum stick down

U+E80E

pictBeaterDoubleBassDrumUp

Double bass drum stick up

U+E80F

pictBeaterDoubleBassDrumDown

Double bass drum stick down

U+E810

pictBeaterSoftYarnUp

Soft yarn beater up

U+E811

pictBeaterSoftYarnDown

Soft yarn beater down

U+E812

pictBeaterSoftYarnRight

Soft yarn beater right

U+E813

pictBeaterSoftYarnLeft

Soft yarn beater left

U+E814

pictBeaterMediumYarnUp

Medium yarn beater up

U+E815

pictBeaterMediumYarnDown

Medium yarn beater down

U+E816

pictBeaterMediumYarnRight

Medium yarn beater right

U+E817

pictBeaterMediumYarnLeft

Medium yarn beater left

U+E818

pictBeaterHardYarnUp

Hard yarn beater up

U+E819

pictBeaterHardYarnDown

Hard yarn beater down

U+E81A

pictBeaterHardYarnRight

Hard yarn beater right

U+E81B

pictBeaterHardYarnLeft

Hard yarn beater left

U+E81C

pictBeaterSuperballUp

Superball beater up

U+E81D

pictBeaterSuperballDown

Superball beater down

U+E81E

pictBeaterSuperballRight

Superball beater right

U+E81F

pictBeaterSuperballLeft

Superball beater left

U+E820

pictSuperball

Superball

U+E821

pictWoundHardUp

Wound beater, hard core up

U+E822

pictWoundHardDown

Wound beater, hard core down

U+E823

pictWoundHardRight

Wound beater, hard core right

U+E824

pictWoundHardLeft

Wound beater, hard core left

U+E825

pictWoundSoftUp

Wound beater, soft core up

U+E826

pictWoundSoftDown

Wound beater, soft core down

U+E827

pictWoundSoftRight

Wound beater, soft core right

U+E828

pictWoundSoftLeft

Wound beater, soft core left

U+E829

pictGumSoftUp

Soft gum beater, up

U+E82A

pictGumSoftDown

Soft gum beater, down

U+E82B

pictGumSoftRight

Soft gum beater, right

U+E82C

pictGumSoftLeft

Soft gum beater, left

U+E82D

pictGumMediumUp

Medium gum beater, up

U+E82E

pictGumMediumDown

Medium gum beater, down

U+E82F

pictGumMediumRight

Medium gum beater, right

U+E830

pictGumMediumLeft

Medium gum beater, left

U+E831

pictGumHardUp

Hard gum beater, up

U+E832

pictGumHardDown

Hard gum beater, down

U+E833

pictGumHardRight

Hard gum beater, right

U+E834

pictGumHardLeft

Hard gum beater, left

U+E835

pictBeaterSnareSticksUp

Snare sticks up

U+E836

pictBeaterSnareSticksDown

Snare sticks down

U+E837

pictBeaterJazzSticksUp

Jazz sticks up

U+E838

pictBeaterJazzSticksDown

Jazz sticks down

U+E839

pictBeaterTriangleUp

Triangle beater up

U+E83A

pictBeaterTriangleDown

Triangle beater down

U+E83B

pictBeaterWireBrushesUp

Wire brushes up

U+E83C

pictBeaterWireBrushesDown

Wire brushes down

U+E83D

pictBeaterBrassMalletsUp

Brass mallets up

U+E83E

pictBeaterBrassMalletsDown

Brass mallets down

U+E83F

pictBeaterSoftXylophone

Soft xylophone beaters

U+E840

pictBeaterSpoonWoodenMallet

Spoon-shaped wooden mallet

U+E841

pictBeaterGuiroScraper

Guiro scraper

U+E842

pictBeaterBow

Bow

U+E843

pictBeaterMallet

Chime hammer

U+E844

pictBeaterMetalHammer

Metal hammer

U+E845

pictBeaterHammer

Hammer

U+E846

pictBeaterKnittingNeedle

Knitting needle

U+E847

pictBeaterHand

Hand

U+E848

pictBeaterFinger

Finger

U+E849

pictBeaterFist

Fist

U+E84A

pictBeaterFingernails

Fingernails

U+E84B

pictCoins

Coins

U+E84C

pictDrumStick

Drum stick

Percussion playing technique pictograms (U+E860–U+E87F)

U+E860

pictStickShot

Stick shot

U+E861

pictScrapeCenterToEdge

Scrape from center to edge

U+E862

pictScrapeEdgeToCenter

Scrape from edge to center

U+E863

pictScrapeAroundRim

Scrape around rim

U+E864

pictOnRim

On rim

U+E865

pictOpenRimShot

Closed / rim shot

U+E866

pictHalfOpen1

Half-open

U+E867

pictHalfOpen2

Half-open 2 (Weinberg)

U+E868

pictOpen

Open

U+E869

pictDamp1

Damp

U+E86A

pictDamp2

Damp 2

U+E86B

pictDamp3

Damp 3

U+E86C

pictDamp4

Damp 4

U+E86D

pictRimShotOnStem

Rim shot (on stem)

U+E86E

pictCenter1

Center (Weinberg)

U+E86F

pictCenter2

Center (Ghent)

U+E870

pictCenter3

Center (Caltabiano)

U+E871

pictRim1

Rim or edge (Weinberg)

U+E872

pictRim2

Rim (Ghent)

U+E873

pictRim3

Rim (Caltabiano)

U+E874

pictNormalPosition

Normal position (Caltabiano)

U+E875

pictChokeCymbal

Choke (Weinberg)

Handbells (U+E880–U+E89F)

U+E880

handbellsMartellato

Martellato

U+E881

handbellsMartellatoLift

Martellato lift

U+E882

handbellsHandMartellato

Hand martellato

U+E883

handbellsMutedMartellato

Muted martellato

U+E884

handbellsMalletBellSuspended

Mallet, bell suspended

U+E885

handbellsMalletBellOnTable

Mallet, bell on table

U+E886

handbellsMalletLft

Mallet lift

U+E887

handbellsPluckLift

Pluck lift

U+E888

handbellsSwingUp

Swing up

U+E889

handbellsSwingDown

Swing down

U+E88A

handbellsSwing

Swing

U+E88B

handbellsEcho1

Echo

U+E88C

handbellsEcho2

Echo 2

U+E88D

handbellsGyro

Gyro

U+E88E

handbellsDamp3

Damp 3

U+E88F

handbellsBelltree

Belltree

Guitar (U+E8A0–U+E8BF)

U+E8A0

guitarVibratoBarScoop

Guitar vibrato bar scoop

U+E8A1

guitarVibratoBarDip

Guitar vibrato bar dip

U+E8A2

guitarShake

Guitar shake

U+E8A3

guitarString0

String number 0

U+E8A4

guitarString1

String number 1

U+E8A5

guitarString2

String number 2

U+E8A6

guitarString3

String number 3

U+E8A7

guitarString4

String number 4

U+E8A8

guitarString5

String number 5

U+E8A9

guitarString6

String number 6

U+E8AA

guitarString7

String number 7

U+E8AB

guitarString8

String number 8

U+E8AC

guitarString9

String number 9

U+E8AD

guitarOpenPedal

Open wah/volume pedal

U+E8AE

guitarHalfOpenPedal

Half-open wah/volume pedal

U+E8AF

guitarClosePedal

Closed wah/volume pedal

U+E8B0

guitarLeftHandTapping

Left-hand tapping

U+E8B1

guitarRightHandTapping

Right-hand tapping

Chord diagrams (U+E8C0–U+E8CF)

U+E8C0

fretboard3String

3-string fretboard

U+E8C1

fretboard3StringNut

3-string fretboard at nut

U+E8C2 (and U+1D11D)

fretboard4String

4-string fretboard

U+E8C3

fretboard4StringNut

4-string fretboard at nut

U+E8C4

fretboard5String

5-string fretboard

U+E8C5

fretboard5StringNut

5-string fretboard at nut

U+E8C6 (and U+1D11C)

fretboard6String

6-string fretboard

U+E8C7

fretboard6StringNut

6-string fretboard at nut

U+E8C8

fretboardFilledCircle

• Fingered fret (filled circle)

U+E8C9

fretboardX

× String not played (X)

U+E8CA

fretboard0

° Open string (O)

Implementation notes

Scoring applications may choose to draw chord diagram fretboards using primitives in order to provide the end user with control over grid spacing and line thickness relative to size.

Analytics (U+E8E0–U+E8FF)

U+E8E0 (and U+1D1A6)

analyticsHauptstimme

Hauptstimme

U+E8E1 (and U+1D1A7)

analyticsNebenstimme

Nebenstimme

U+E8E2

analyticsStartStimme

Start of stimme

U+E8E3 (and U+1D1A8)

analyticsEndStimme

End of stimme

U+E8E4

analyticsTheme

Theme

U+E8E5

analyticsThemeRetrograde

Retrograde of theme

U+E8E6

analyticsThemeRetrogradeInversion

Retrograde inversion of theme

U+E8E7

analyticsThemeInversion

Inversion of theme

U+E8E8

analyticsTheme1

Theme 1

U+E8E9

analyticsInversion1

Inversion 1

Chord symbols (U+E900–U+E90F)

U+E900 (and U+1D1A9)

csymHalfDiminished

Half-diminished

U+E901

csymDiminished

Diminished

U+E902

csymAugmented

Augmented

U+E903

csymMajorSeventh

Major seventh

U+E904

csymMinor

Minor

Implementation notes

These symbols are designed to combine with accidental symbols (U+E2A2 for sharp and U+E2A0 for flat) from the music font and the letters A–G (for root and bass alterations), lower case letters (for chord qualities, e.g. “maj” and “min”) and numbers (for chord extensions or tensions) from any standard text font to produce complete chord symbols.

Scoring applications should be able to create strings with complex formatting, e.g. superscript and subscript characters, small digits stacked on top of each other, and scale these symbols to any arbitrary size in order to produce satisfactory chord symbols with a wide variety of visual appearances.

Tuplets (U+E910–U+E92F)

U+E910

tuplet0

Tuplet 0

U+E911

tuplet1

Tuplet 1

U+E912

tuplet2

Tuplet 2

U+E913

tuplet3

Tuplet 3

U+E914

tuplet4

Tuplet 4

U+E915

tuplet5

Tuplet 5

U+E916

tuplet6

Tuplet 6

U+E917

tuplet7

Tuplet 7

U+E918

tuplet8

Tuplet 8

U+E919

tuplet9

Tuplet 9

U+E91A

tupletColon

Tuplet colon

Conductor symbols (U+E930–U+E94F)

U+E930

conductorStrongBeat

Strong beat or cue

U+E931

conductorLeftBeat

Left-hand beat or cue

U+E932

conductorRightBeat

Right-hand beat or cue

U+E933

conductorWeakBeat

Weak beat or cue

U+E934

conductorBeat2Simple

Beat 2, simple time

U+E935

conductorBeat3Simple

Beat 3, simple time

U+E936

conductorBeat4Simple

Beat 4, simple time

U+E937

conductorBeat2Compound

Beat 2, compound time

U+E938

conductorBeat3Compound

Beat 3, compound time

U+E939

conductorBeat4Compound

Beat 4, compound time

Accordion (U+E950–U+E97F)

U+E950

accdnRH3RanksPiccolo

Right hand, 3 ranks, 4' stop (piccolo)

U+E951

accdnRH3RanksClarinet

Right hand, 3 ranks, 8' stop (clarinet)

U+E952

accdnRH3RanksUpperTremolo8

Right hand, 3 ranks, upper tremolo 8' stop

U+E953

accdnRH3RanksLowerTremolo8

Right hand, 3 ranks, lower tremolo 8' stop

U+E954

accdnRH3RanksBassoon

Right hand, 3 ranks, 16' stop (bassoon)

U+E955

accdnRH3RanksOboe

Right hand, 3 ranks, 4' stop + 8' stop (oboe)

U+E956

accdnRH3RanksViolin

Right hand, 3 ranks, 8' stop + upper tremolo 8' stop (violin)

U+E957

accdnRH3RanksImitationMusette

Right hand, 3 ranks, 4' stop + 8' stop + upper tremolo 8' stop

U+E958

accdnRH3RanksAuthenticMusette

Right hand, 3 ranks, lower tremolo 8' stop + 8' stop + upper tremolo 8'

U+E959

accdnRH3RanksOrgan

Right hand, 3 ranks, 4' stop + 16' stop (organ)

U+E95A

accdnRH3RanksHarmonium

Right hand, 3 ranks, 4' stop + 8' stop + 16' stop (harmonium)

U+E95B

accdnRH3RanksBandoneon

Right hand, 3 ranks, 8' stop + 16' stop (bandoneón)

U+E95C

accdnRH3RanksAccordion

Right hand, 3 ranks, 8' stop + upper tremolo 8' stop + 16' stop

U+E95D

accdnRH3RanksMaster

Right hand, 3 ranks, 4' stop + lower tremolo 8' stop + upper tremolo 8'

U+E95E

accdnRH4RanksSoprano

Right hand, 4 ranks, soprano

U+E95F

accdnRH4RanksAlto

Right hand, 4 ranks, alto

U+E960

accdnRH4RanksTenor

Right hand, 4 ranks, tenor

U+E961

accdnRH4RanksMaster

Right hand, 4 ranks, master

U+E962

accdnRH4RanksSoftBass

Right hand, 4 ranks, soft bass

U+E963

accdnRH4RanksSoftTenor

Right hand, 4 ranks, soft tenor

U+E964

accdnRH4RanksBassAlto

Right hand, 4 ranks, bass/alto

U+E965

accdnLH2Ranks8Round

Left hand, 2 ranks, 8' stop (round)

U+E966

accdnLH2Ranks16Round

Left hand, 2 ranks, 16' stop (round)

U+E967

accdnLH2Ranks8Plus16Round

Left hand, 2 ranks, 8' stop + 16' stop (round)

U+E968

accdnLH2RanksMasterRound

Left hand, 2 ranks, master (round)

U+E969

accdnLH2RanksMasterPlus16Round

Left hand, 2 ranks, master + 16' stop (round)

U+E96A

accdnLH2RanksFullMasterRound

Left hand, 2 ranks, full master (round)

U+E96B

accdnLH3Ranks8Square

Left hand, 3 ranks, 8' stop (square)

U+E96C

accdnLH3Ranks2Square

Left hand, 3 ranks, 2' stop (square)

U+E96D

accdnLH3RanksDouble8Square

Left hand, 3 ranks, double 8' stop (square)

U+E96E

accdnLH3Ranks2Plus8Square

Left hand, 3 ranks, 2' stop + 8' stop (square)

U+E96F

accdnLH3RanksTuttiSquare

Left hand, 3 ranks, 2' stop + double 8' stop (tutti) (square)

Beams and slurs (U+E980–U+E98F)

U+E980 (and U+1D173)

controlBeginBeam

Begin beam

U+E981 (and U+1D174)

controlEndBeam

End beam

U+E982 (and U+1D175)

controlBeginTie

Begin tie

U+E983 (and U+1D176)

controlEndTie

End tie

U+E984 (and U+1D177)

controlBeginSlur

Begin slur

U+E985 (and U+1D178)

controlEndSlur

End slur

U+E986 (and U+1D179)

controlBeginPhrase

Begin phrase

U+E987 (and U+1D17A)

controlEndPhrase

End phrase

Implementation notes

These are format characters as defined in the Unicode Standard[16]:

> Extensive ligature-like beams are used frequently in musical notation between groups of notes having short values. The practice is widespread and very predictable, so it is therefore amenable to algorithmic handling. The format characters U+1D173 musical symbol begin beam and U+1D174 musical symbol end beam can be used to indicate the extents of beam groupings. In some exceptional cases, beams are left unclosed on one end. This status can be indicated with a U+1D159 musical symbol null notehead character if no stem is to appear at the end of the beam.
>
> Similarly, format characters have been provided for other connecting structures. The characters U+1D175 musical symbol begin tie, U+1D176 musical symbol end tie, U+1D177 musical symbol begin slur, U+1D178 musical symbol end slur, U+1D179 musical symbol begin phrase, and U+1D17A musical symbol end phrase indicate the extent of these features. Like beaming, these features are easily handled in an algorithmic fashion.
>
> These pairs of characters modify the layout and grouping of notes and phrases in full musical notation. When musical examples are written or rendered in plain text without special software, the start/end format characters may be rendered as brackets or left uninterpreted. To the extent possible, more sophisticated software that renders musical examples inline with natural-language text might interpret them in their actual format control capacity, rendering slurs, beams, and so forth, as appropriate.

[16] *Ibid.*, Allen, page 537.

Scoring applications may choose to implement these format characters for beams, slurs, phrase marks and ties or not, as they wish.

Mensural notation (U+E990–U+E9BF)

U+E990 (and U+1D1B6)

mensuralMaximaUpRight

Maxima, stem up right

U+E991

mensuralMaximaDownRight

Maxima, stem down right

U+E992

mensuralMaximaUpLeft

Maxima, stem up left

U+E993

mensuralMaximaDownLeft

Maxima, stem down left

U+E994 (and U+1D1B7)

mensuralLongaUpRight

Longa, stem up right

U+E995

mensuralLongaDownRight

Longa, stem down right

U+E996

mensuralLongaUpLeft

Longa, stem up left

U+E997

mensuralLongaDownLeft

Longa, stem down left

U+E998 (and U+1D1B8)

mensuralBrevis

Brevis

U+E999 (and U+1D1B9)

mensuralSemibrevisWhite

Semibrevis white

U+E99A (and U+1D1BA)

mensuralSemibrevisBlack

Semibrevis black

U+E99B (and U+1D1BB)

mensuralMinimaWhiteUp

Minima white, stem up

U+E99C

mensuralMinimaWhiteDown

Minima white, stem down

U+E99D (and U+1D1BC)

mensuralMinimaBlackUp

Minima black, stem up

U+E99E

mensuralMinimaBlackDown

Minima black, stem down

U+E99F (and U+1D1BD)

mensuralSemiminimaWhiteUp

Semiminima white, stem up

U+E9A0

mensuralSemiminimaWhiteDown

Semiminima white, stem down

U+E9A1 (and U+1D1BE)

mensuralSemiminimaBlackUp

Semiminima black, stem up

U+E9A2

mensuralSemiminimaBlackDown

Semiminima black, stem down

U+E9A3 (and U+1D1BF)

mensuralFusaWhiteUp

Fusa white, stem up

U+E9A4

mensuralFusaWhiteDown

Fusa white, stem down

U+E9A5 (and U+1D1C0)

mensuralFusaBlackUp

Fusa black, stem up

U+E9A6

mensuralFusaBlackDown

Fusa black, stem down

U+E9A7

mensuralSignum

Signum congruentia

U+E9A8

mensuralCustosUp

Custos up

U+E9A9

mensuralCustosDown

Custos down

Mensural rests (U+E9C0–U+E9CF)

U+E9C0 (and U+1D1C1)

mensuralRestLongaPerfecta

Longa perfecta rest

U+E9C1 (and U+1D1C2)

mensuralRestLongaImperfecta

Longa imperfecta rest

U+E9C2 (and U+1D1C3)

mensuralRestBrevis

Brevis rest

U+E9C3 (and U+1D1C4)

mensuralRestSemibrevis

Semibrevis rest

U+E9C4 (and U+1D1C5)

mensuralRestMinima

Minima rest

U+E9C5 (and U+1D1C6)

mensuralRestSemiminima

Semiminima rest

Mensural prolations (U+E9D0–U+E9EF)

U+E9D0 (and U+1D1C7)

mensuralProlation1

Tempus perfectum cum prolatione perfecta

U+E9D1 (and U+1D1C8)

mensuralProlation2

Tempus perfectum cum prolatione imperfecta

U+E9D2 (and U+1D1C9)

mensuralProlation3

Tempus perfectum cum prolatione perfecta diminiution 1

U+E9D3

mensuralProlation4

Tempus perfectum cum prolatione perfecta diminution 2

U+E9D4 (and U+1D1CA)

mensuralProlation5

Tempus imperfectum cum prolatione perfecta

U+E9D5 (and U+1D1CB)

mensuralProlation6

Tempus imperfectum cum prolatione imperfecta

U+E9D6 (and U+1D1CC)

mensuralProlation7

Tempus imperfectum cum prolatione imperfecta diminution 1

U+E9D7

mensuralProlation8

Tempus imperfectum cum prolatione imperfecta diminution 2

U+E9D8 (and U+1D1CD)

mensuralProlation9

Tempus imperfectum cum prolatione imperfecta diminution 3

U+E9D9 (and U+1D1CE)

mensuralProlation10

Tempus imperfectum cum prolatione imperfecta diminution 4

U+E9DA

mensuralProlation11

Tempus imperfectum cum prolatione imperfecta diminution 5

U+E9DB

mensuralProportion1

Mensural proportion 1

U+E9DC

mensuralProportion2

Mensural proportion 2

U+E9DD

mensuralProportion3

Mensural proportion 3

U+E9DE

mensuralProportion4

Mensural proportion 4

U+E9DF

mensuralProportion4Old

Mensural proportion 4 (old)

Gregorian notation (U+E9F0–U+EA0F)

U+E9F0 (and U+1D1D0)

gregorianCClef

Gregorian C clef

U+E9F1 (and U+1D1D1)

gregorianFClef

Gregorian F clef

U+E9F2 (and U+1D1D2)

gregorianSquareB

Gregorian flat

U+E9F3 (and U+1D1D3)

gregorianVirga

Virga

U+E9F4 (and U+1D1D4)

gregorianPodatus

Podatus

U+E9F5 (and U+1D1D5)

gregorianClivis

Clivis

U+E9F6 (and U+1D1D6)

gregorianScandicus

Scandicus

U+E9F7 (and U+1D1D7)

gregorianClimacus

Climacus

U+E9F8 (and U+1D1D8)

gregorianTorculus

Torculus

U+E9F9 (and U+1D1D9)

gregorianPorrectus

Porrectus

U+E9FA (and U+1D1DA)

gregorianPorrectusFlexus

Porrectus flexus

U+E9FB (and U+1D1DB)

gregorianScandicusFlexus

Scandicus flexus

U+E9FC (and U+1D1DC)

gregorianTorculusResupinus

Torculus resupinus

U+E9FD (and U+1D1DD)

gregorianPesSubpunctis

Pes subpunctis

Modern transcription of Gregorian notation (U+EA10–U+EA1F)

U+EA10

ornamentQuilisma

Quilisma

U+EA11

ornamentOriscus

Oriscus

Figured bass (U+EA20–U+EA3F)

U+EA20

figbass0

Figured bass 0

U+EA21

figbass1

Figured bass 1

U+EA22

figbass2

Figured bass 2

U+EA23

figbass2Raised

Figured bass 2 raised by half-step

U+EA24

figbass3

Figured bass 3

U+EA25

figbass4

Figured bass 4

U+EA26

figbass4Raised

Figured bass 4 raised by half-step

U+EA27

figbass5

Figured bass 5

U+EA28

figbass5Raised1

Figured bass 5 raised by half-step

U+EA29

figbass5Raised2

Figured bass 5 raised by half-step 2

U+EA2A

figbass5Raised3

Figured bass diminished 5

U+EA2B

figbass6

Figured bass 6

U+EA2C

figbass6Raised

Figured bass 6 raised by half-step

U+EA2D

figbass7

Figured bass 7

U+EA2E

figbass7Raised

Figured bass 7 raised by half-step

U+EA2F

figbass8

Figured bass 8

U+EA30

figbass9

Figured bass 9

U+EA31

figbass9Raised

Figured bass 9 raised by half-step

U+EA32

figbassDoubleFlat

Figured bass double flat

U+EA33

figbassFlat

Figured bass flat

U+EA34

figbassNatural

Figured bass natural

U+EA35

figbassSharp

Figured bass sharp

U+EA36

figbassDoubleSharp

Figured bass double sharp

U+EA37

figbassBracketLeft

Figured bass [

U+EA38

figbassBracketRight

Figured bass]

U+EA39

figbassParensLeft

Figured bass (

U+EA3A

figbassParensRight

Figured bass)

U+EA3B

figbassPlus

Figured bass +

U+EA3C

figbassCombiningRaising

Combining raise

U+EA3D

figbassCombiningLowering

Combining lower

Function theory symbols (U+EA40–U+EA7F)

0

U+EA40

functionZero

Function theory 0

1

U+EA41

functionOne

Function theory 1

2

U+EA42

functionTwo

Function theory 2

3

U+EA43

functionThree

Function theory 3

4

U+EA44

functionFour

Function theory 4

5

U+EA45

functionFive

Function theory 5

6

U+EA46

functionSix

Function theory 6

7

U+EA47

functionSeven

Function theory 7

8

U+EA48

functionEight

Function theory 8

9

U+EA49

functionNine

Function theory 9

<

U+EA4A

functionLessThan

Function theory less than

-

U+EA4B

functionMinus

Function theory minus

>

U+EA4C

functionGreaterThan

Function theory greater than

SS

U+EA4D

functionSS

Function theory major subdominant of subdominant

D

U+EA4F

functionD

Function theory major dominant

DD

U+EA51

functionDD

Function theory dominant of dominant

D/D

U+EA52

functionSlashedDD

Function theory double dominant seventh

G

U+EA53

functionG

Function theory G

N

U+EA55

functionN

Function theoryl N

P

U+EA57

functionP

Function theory P

S

U+EA59

functionS

Function theory major subdominant

T

U+EA5B

functionT

Function theory tonic

V

U+EA5D

functionV

Function theory V

[

U+EA5F

functionBracketLeft

Function theory bracket left

]

U+EA60

functionBracketRight

Function theory bracket right

(

U+EA61

functionParensLeft

Function theory parenthesis left

)

U+EA62

functionParensRight

Function theory parenthesis right

〈

U+EA63

functionAngleLeft

Function theory angle bracket left

〉

U+EA64

functionAngleRight

Function theory angle bracket right

..

U+EA65

functionRepetition1

Function theory repetition 1

∔

U+EA66

functionRepetition2

Function theory repetition 2

∘

U+EA67

functionRing

Function theory prefix ring

\+

U+EA68

functionPlus

Function theory prefix plus

Multi-segment lines (U+EA80–U+EADF)

U+EA80

wiggleTrillFastest

Trill wiggle segment, fastest

U+EA81

wiggleTrillFasterStill

Trill wiggle segment, faster still

U+EA82

wiggleTrillFaster

Trill wiggle segment, faster

U+EA83

wiggleTrillFast

Trill wiggle segment, fast

U+EA84

wiggleTrill

Trill wiggle segment

U+EA85

wiggleTrillSlow

Trill wiggle segment, slow

U+EA86

wiggleTrillSlower

Trill wiggle segment, slower

U+EA87

wiggleTrillSlowerStill

Trill wiggle segment, slower still

U+EA88

wiggleTrillSlowest

Trill wiggle segment, slowest

U+EA89

wiggleArpeggiatoUp

Arpeggiato wiggle segment, upwards

U+EA8A

wiggleArpeggiatoDown

Arpeggiato wiggle segment, downwards

U+EA8B

wiggleArpeggiatoUpSwash

Arpeggiato upward swash

U+EA8C

wiggleArpeggiatoDownSwash

Arpeggiato downward swash

U+EA8D

wiggleArpeggiatoUpArrow

Arpeggiato arrowhead up

U+EA8E

wiggleArpeggiatoDownArrow

Arpeggiato arrowhead down

U+EA8F

wiggleGlissando

Glissando wiggle segment

U+EA90

wiggleVibrato

Vibrato / shake wiggle segment

U+EA91

wiggleVibratoWide

Wide vibrato / shake wiggle segment

U+EA92

guitarVibratoStroke

Vibrato wiggle segment

U+EA93

guitarWideVibratoStroke

Wide vibrato wiggle segment

U+EA94

wiggleWavy

Wavy line segment

U+EA95

wiggleSquaretooth

Squaretooth line segment

U+EA96

wiggleSawtooth

Sawtooth line segment

U+EA97

wiggleGlissandoGroup1

Group glissando 1

U+EA98

wiggleGlissandoGroup2

Group glissando 2

U+EA99

wiggleGlissandoGroup3

Group glissando 3

U+EA9A

wiggleCircularConstant

Constant circular motion segment

U+EA9B

wiggleCircularStart

Circular motion start

U+EA9C

wiggleCircularLargest

Circular motion segment, largest

U+EA9D

wiggleCircularLargerStill

Circular motion segment, larger still

U+EA9E

wiggleCircularLarger

Circular motion segment, larger

U+EA9F

wiggleCircularLarge

Circular motion segment, large

U+EAA0

wiggleCircular

Circular motion segment

U+EAA1

wiggleCircularSmall

Circular motion segment, small

U+EAA2

wiggleCircularEnd

Circular motion end

U+EAA3

wiggleVibratoStart

Vibrato start

U+EAA4

wiggleVibratoSmallestFastest

Vibrato smallest, fastest

U+EAA5

wiggleVibratoSmallestFasterStill

Vibrato smallest, faster still

U+EAA6

wiggleVibratoSmallestFaster

Vibrato smallest, faster

U+EAA7

wiggleVibratoSmallestFast

Vibrato smallest, fast

U+EAA8

wiggleVibratoSmallestSlow

Vibrato smallest, slow

U+EAA9

wiggleVibratoSmallestSlower

Vibrato smallest, slower

U+EAAA

wiggleVibratoSmallestSlowest

Vibrato smallest, slowest

U+EAAB

wiggleVibratoSmallFastest

Vibrato small, fastest

U+EAAC

wiggleVibratoSmallFasterStill

Vibrato small, faster still

U+EAAD

wiggleVibratoSmallFaster

Vibrato small, faster

U+EAAE

wiggleVibratoSmallFast

Vibrato small, fast

U+EAAF

wiggleVibratoSmallSlow

Vibrato small, slow

U+EAB0

wiggleVibratoSmallSlower

Vibrato small, slower

U+EAB1

wiggleVibratoSmallSlowest

Vibrato small, slowest

U+EAB2

wiggleVibratoMediumFastest

Vibrato medium, fastest

U+EAB3

wiggleVibratoMediumFasterStill

Vibrato medium, faster still

U+EAB4

wiggleVibratoMediumFaster

Vibrato medium, faster

U+EAB5

wiggleVibratoMediumFast

Vibrato medium, fast

U+EAB6

wiggleVibratoMediumSlow

Vibrato medium, slow

U+EAB7

wiggleVIbratoMediumSlower

Vibrato medium, slower

U+EAB8

wiggleVibratoMediumSlowest

Vibrato medium, slowest

U+EAB9

wiggleVibratoLargeFastest

Vibrato large, fastest

U+EABA

wiggleVibratoLargeFasterStill

Vibrato large, faster still

U+EABB

wiggleVibratoLargeFaster

Vibrato large, faster

U+EABC

wiggleVibratoLargeFast

Vibrato large, fast

U+EABD

wiggleVibratoLargeSlow

Vibrato large, slow

U+EABE

wiggleVibratoLargeSlower

Vibrato large, slower

U+EABF

wiggleVibratoLargeSlowest

Vibrato large, slowest

U+EAC0

wiggleVibratoLargestFastest

Vibrato largest, fastest

U+EAC1

wiggleVibratoLargestFasterStill

Vibrato largest, faster still

U+EAC2

wiggleVibratoLargestFaster

Vibrato largest, faster

U+EAC3

wiggleVibratoLargestFast

Vibrato largest, fast

U+EAC4

wiggleVibratoLargestSlow

Vibrato largest, slow

U+EAC5

wiggleVIbratoLargestSlower

Vibrato largest, slower

U+EAC6

wiggleVibratoLargestSlowest

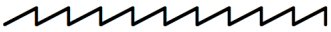
Vibrato largest, slowest

Implementation notes

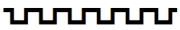
Scoring applications can combine these glyphs to produce lines of varying lengths. By way of example:

U+E593, U+EA80, U+EA81, U+EA82, U+EA83, U+EA84, U+EA86, U+EA87, U+EA84, U+EA82, U+EA81

10 x U+EA9F



10 x U+EA96



6 x U+EA95

U+EA9B, U+EA9C, U+EA9D, U+EA9E, U+EA9F, U+EAA2

U+EAA3, U+EAA4, U+EAB7, U+EAB8, U+EAB4, U+EAB3, etc.

Electronic music pictograms (U+EAE0–U+EAFF)

U+EAE0

elecMicrophone

Microphone

U+EAE1

elecLoudspeaker

Loudspeaker

U+EAE2

elecPlay

Play

U+EAE3

elecStop

Stop

U+EAE4

elecPause

Pause

U+EAE5

elecSkipForwards

Skip forwards

U+EAE6

elecSkipBackwards

Skip backwards

U+EAE7

elecLoop

Loop

U+EAE8

elecVolumeLevel0

Volume level 0%

U+EAE9

elecVolumeLevel20

Volume level 20%

U+EAEA

elecVolumeLevel40

Volume level 40%

U+EAEB

elecVolumeLevel60

Volume level 60%

U+EAEC

elecVolumeLevel80

Volume level 80%

U+EAED

elecVolumeLevel100

Volume level 100%

U+EAEE

elecMIDIIn

MIDI in

U+EAEF

elecMIDIOut

MIDI out

U+EAF0

elecMIDIController0

MIDI controller 0%

U+EAF1

elecMIDIController20

MIDI controller 20%

U+EAF2

elecMIDIController40

MIDI controller 40%

U+EAF3

elecMIDIController60

MIDI controller 60%

U+EAF4

elecMIDIController80

MIDI controller 80%

U+EAF5

elecMIDIController100

MIDI controller 100%

Arrows and arrowheads (U+EB00–U+EB2F)

U+EB00

arrowBlackUp

Black arrow up (N)

U+EB01

arrowBlackUpRight

Black arrow up-right (NE)

U+EB02

arrowBlackRight

Black arrow right (E)

U+EB03

arrowBlackDownRight

Black arrow down-right (SE)

U+EB04

arrowBlackDown

Black arrow down (S)

U+EB05

arrowBlackDownLeft

Black arrow down-left (SW)

U+EB06

arrowBlackLeft

Black arrow left (W)

U+EB07

arrowBlackUpLeft

Black arrow up-left (NW)

U+EB08

arrowWhiteUp

White arrow up (N)

U+EB09

arrowWhiteUpRight

White arrow up-right (NE)

U+EB0A

arrowWhiteRight

White arrow right (E)

U+EB0B

arrowWhiteDownRight

White arrow down-right (SE)

U+EB0C

arrowWhiteDown

White arrow down (S)

U+EB0D

arrowWhiteDownLeft

White arrow down-left (SW)

U+EB0E

arrowWhiteLeft

White arrow left (W)

U+EB0F

arrowWhiteUpLeft

White arrow up-left (NW)

U+EB10

arrowheadBlackUp

Black arrowhead up (N)

U+EB11

arrowheadBlackUpRight

Black arrowhead up-right (NE)

U+EB12

arrowheadBlackRight

Black arrowhead right (E)

U+EB13

arrowheadBlackDownRight

Black arrowhead down-right (SE)

U+EB14

arrowheadBlackDown

Black arrowhead down (S)

U+EB15

arrowheadBlackDownLeft

Black arrowhead down-left (SW)

U+EB16

arrowheadBlackLeft

Black arrowhead left (W)

U+EB17

arrowheadBlackUpLeft

Black arrowhead up-left (NW)

U+EB18

arrowheadWhiteUp

White arrowhead up (N)

U+EB19

arrowheadWhiteUpRight

White arrowhead up-right (NE)

U+EB1A

arrowheadWhiteRight

White arrowhead right (E)

U+EB1B

arrowheadWhiteDownRight

White arrowhead down-right (SE)

U+EB1C

arrowheadWhiteDown

White arrowhead down (S)

U+EB1D

arrowheadWhiteDownLeft

White arrowhead down-left (SW)

U+EB1E

arrowheadWhiteLeft

White arrowhead left (W)

U+EB1F

arrowheadWhiteUpLeft

White arrowhead up-left (NW)

Miscellaneous symbols (U+EB30–U+EB3F)

U+EB30 (and U+1D1CF)

mensuralCroix

Croix

U+EB31

miscSwish

Swish

U+EB32

miscDoNotPhotocopy

Do not photocopy

U+EB33

miscDoNotCopy

Do not copy

U+EB34

miscEyeglasses

Eyeglasses

U+EB35

miscStaffDivideArrowDown

Staff divide arrow down

U+EB36

miscStaffDivideArrowUp

Staff divide arrow up

U+EB37

miscStaffDivideArrowUpDown

Staff divide arrows