

Yuefu User Guide

Traditional instruments of China and Vietnam

Version 1.0.0 · AuraLink Studio

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1. Welcome

Yuefu is a sample instrument for the traditional instruments of China and Vietnam. One plug-in holds all of them: plucked and struck strings, bowed strings, winds and percussion. You choose an instrument in the list, and the same small set of controls plays every one of them.

Three ideas run through the whole instrument:

- **The recordings stay on disk.** Only the first moments of each sound are kept in memory; the rest is read while you play. An instrument takes a few megabytes of memory, not gigabytes.
- **One map of keyswitches.** The twelve keys C0-B0 choose the articulation on every instrument, and the same kind of technique sits on the same key wherever it exists.
- **The player's gestures are in the instrument.** Slurs, slides, vibrato, tremolo, damping and the ring of a string are recorded or played by the engine, so a line written with plain notes already sounds played.

Yuefu runs as a 64-bit VST3 instrument on Windows 10 and Windows 11.

How notes are named in this guide

Middle C (MIDI note 60) is **C4**. The keyswitches C0-B0 are MIDI notes 12-23. Some hosts name the same notes one octave lower (middle C = C3): there the keyswitches appear as C-1 to B-1. If in doubt, go by the MIDI note numbers.

2. Installing and activating

Installing

Run `Yuefu-1.0.0-Setup.exe` with your host program closed and follow the pages. Setup installs the plug-in for every user of the computer in

```
C:\Program Files\Common Files\VST3\Auralink Studio
```

Then start your host and let it scan for new plug-ins. Yuefu appears among the VST3 instruments as **Yuefu**, by AuraLink Studio.

Adding the sound banks

Each instrument is one folder of sound files, a *bank*. The banks are delivered apart from the plug-in. Copy the bank folders you received into

```
C:\ProgramData\AuraLink\Yuefu\banks
```

so that, for example, the guzheng is in `banks\guzheng`. To keep the banks on another drive, open the menu (the three lines at the top right of the plug-in), choose **Bank folder > Choose a folder...** and point it at the folder that holds the bank folders. **Bank folder > Default** returns to the folder above. An SSD is recommended.

An instrument whose bank is not in the folder shows as *not installed* in the list.

Activating your licence

A licence key is made for one computer and opens the instruments you bought.

1. In the plug-in's menu choose **Licence...**.
2. Press **Copy** beside the **Machine ID** and send the ID to AuraLink Studio with your order.
3. When you receive the key, paste it into the same panel (or use **Open file...**) and press **Activate**.

The panel then shows the state of the licence, whom it was issued for, and the instruments it opens. An instrument that is installed but not covered by your licence shows as *Locked*; clicking it opens the Licence panel.

- The Machine ID stays the same when Windows is reinstalled on the same computer.
- A perpetual licence works without an internet connection. A licence with an end date needs an online time check from time to time; the panel tells you when.

Moving to another computer

In the Licence panel press **Remove** and confirm. The plug-in shows a **deactivation code**: send it to AuraLink Studio with the Machine ID of the new computer, and you receive a key for that computer. After removal the old computer no longer opens the licensed instruments.

Removing Yuefu

Use *Installed apps* in Windows Settings. The plug-in is removed; your licence, your settings and your sound banks are kept.

3. The window

Area	What it is for
Instruments (left)	The list of instruments. The buttons above it filter by origin (All, China, Vietnam). Click an instrument to load it.
Centre	The name of the instrument, its ranges, and the dial: the ring shows the dynamics (CC1) and the expression (CC11) as they move, with a level meter for left and right.
Articulations (right)	Twelve tiles, one for each keyswitch C0-B0, with the name of the technique and a short hint. The tile in colour is the active one. Click a tile to choose it. A grey tile is a technique this instrument does not have. Percussion shows its **key map** here instead.
Knobs	**Expression** (CC11), **Room** (the built-in reverberation) and **Volume**.
Microphone	The microphone position in use. Click it to choose another; each instrument lists its own positions.
Keyboard (bottom)	Shows the keyswitches, the playable range of the instrument and the keys being played. You can click it to try a note.
Status line	Voices sounding, disk reading rate, memory used by the instrument, and processor load.
Menu (top right)	Language, skin, MIDI channel, Program Change, preload buffer, Multi mode, bank folder, Licence, About.

Switching instrument or microphone loads in the background; the status line shows *Loading the bank...* until the new sound is ready.

Microphones

Position	Character
Mix	The ready-made blend of the positions. The default where it exists.
Close	Near the instrument: direct and dry, the most detail.
Main	The main pair at a natural distance.
Overhead	Above the instrument or the percussion.
Room	Far in the hall: the most space.

One position sounds at a time. Use the **Room** knob to add reverberation to any of them.

4. Playing Yuefu

Keyswitches

The keys **C0-B0** choose the articulation. A keyswitch is not a note: press it shortly before the first note that needs it. It stays in force until you press another one. Each instrument section in this guide lists its keyswitches; a key with no technique on an instrument falls back to its main sound.

The melodic instruments share one plan, so that a part written for one fiddle or flute plays on another:

Key	Usual technique
C0	The main sound: legato on bowed and wind instruments, the plain pluck on plucked ones
C#0	Short notes
D0	Tremolo, flutter or a second vibrato
E0	Portamento or slides
F0	Trills and swells; bends on plucked strings
F#0	Scoops and grace notes; harmonics on plucked strings
G0	Accents
G#0, A0	Recorded vibrato, harmonics, effects
A#0	The plain long note, or let ring
B0	The shortest note

Loudness: velocity or CC1

Each articulation takes its loudness from one of two sources. The tables say which.

- **Velocity** for sounds with a clear start: plucks, strikes, short notes, accents. A harder key is a louder, brighter recording.
- **CC1** (the modulation wheel) for held notes of bowed and wind instruments. Moving CC1 during a note changes its loudness and its tone together, as the player's bow or breath does. On these articulations velocity often chooses something else: the speed of a slur, the direction of a slide. The hint in the table says so ("soft slow, hard fast").

CC11 (expression, also the Expression knob) is a plain volume for the whole instrument, on top of velocity and CC1. Use it for fades and for balancing phrases.

Joined notes

Bowed and wind instruments play one note at a time. When two notes **overlap**, the second is joined to the first with a slur or a slide; when there is a gap, the second note starts anew. Hold a long note as long as you like: it does not run out.

- **CC2** sets the depth of the vibrato and **CC21** its speed, on the articulations whose vibrato is played live by the engine. Leave them alone and the vibrato is the player's natural one.
- **CC5** sets the time of a slide on the portamento articulations.

Plucked and struck strings

These are polyphonic. On most of them a note stops when the key is released, as when the player damps the string, so the length of your notes matters. The **sustain pedal (CC64)** holds released notes; the *Let ring* articulation lets every note ring to its end.

Percussion

A percussion instrument puts one way of striking on each key; the plug-in shows the key map and each section of this guide lists it.

- Velocity is the loudness of the stroke. On many keys **velocity 127** is a different stroke (a double stroke, a variable roll): the key map says which. Keep ordinary strokes at 126 or below.
- Rolls and scrapes sound for as long as the key is held.
- A **choke** key stops the ring of the gong or cymbal.
- Each family has its own keys (drum ensembles from C1, solo drums from C2, tuned drums from C3, gongs from C4, cymbals, bowls and small percussion above), so different families can be layered on one MIDI channel in Multi mode.

Pitch bend

The pitch wheel bends by two semitones up and down. The **Bend Range** parameter changes this from 1 to 12 semitones.

Look-ahead and latency

A real slur begins before the new note arrives. So that joined notes land on the beat, Yuefu holds the notes of some instruments back by a short time and reports that time to the host as latency; the host shifts the track, and everything stays in time on playback. The time is given in each instrument section (**Look-ahead**, up to 250 ms); plucked instruments and percussion have none.

For playing live from a keyboard, switch the **Look-ahead** parameter off in your host's parameter list: the instrument answers at once, and slurs start a little later.

MIDI at a glance

Message	Effect
Notes C0-B0	Keyswitches
Note velocity	Loudness of struck, plucked and short sounds; a choice on some held ones
CC1	Dynamics of held notes
CC2	Vibrato depth
CC5	Slide time
CC11	Expression (volume)
CC21	Vibrato speed
CC64	Sustain pedal
Pitch bend	±2 semitones (Bend Range 1-12)

Message	Effect
Program Change	Chooses the instrument (see chapter 5)
CC120, CC123	All sound off, all notes off

Parameters for automation

Instrument, **Volume** (-24 to +12 dB), **Room**, **Mic**, **Look-ahead**, **Bend Range**, **MIDI Channel**, **Program Change**, and in Multi mode **Volume**, **Pan** and **Mute** for each of the 16 parts.

5. Settings

All settings are in the menu at the top right.

- **Language**: English, Chinese or Vietnamese. One language is shown at a time.
- **Skin**: Winter Plum, Ink & Gold or Studio; *Follow the language* picks one for you.
- **MIDI channel**: *All channels (Omni)* or one channel from 1 to 16. With one channel each, several Yuefu instances can be fed from a single MIDI track.
- **Program Change switches instrument**: when ticked, a MIDI Program Change selects the instrument with that program number (the numbers are in chapter 6). Untick it for MIDI files that begin with a Program Change meant for another synthesiser. A Program Change for an instrument that is not installed is ignored.
- **Preload buffer**: *64 ms* for SSDs (less memory) or *128 ms* for slower disks. Choose 128 ms if you hear notes cut in at their start.
- **Multi mode (16 parts)**: see below.
- **Bank folder**: see chapter 2.

Multi mode

In Multi mode one Yuefu holds up to **16 parts**, each with its own instrument, like a small ensemble in one plug-in.

1. Tick **Multi mode (16 parts)** in the menu.
2. Under **Edit part**, choose the part to work on. The window then shows that part.
3. Choose its instrument in the list, its microphone, and under **MIDI channel** the channel it listens to.
4. **Clear this part** empties the part and frees its memory.

Two parts on the same channel sound together as a layer. Two parts with the same instrument and microphone share their memory. For very large arrangements use several instances: hosts run them on different processor cores.

6. The instruments

60 instruments are in this version.

Instrument	Family	Origin	Range	Mics	Program
Guzheng	Plucked	China	C2–D6	Main, Close, Room	0
Guqin	Plucked	China	A#1–D6	Main, Close, Room	2
Pipa	Plucked	China	A2–E6	Main, Close, Room	1
Liuqin	Plucked	China	F#3–A#6	Main, Close, Room	5
Zhongruan	Plucked	China	A#2–D#6	Main, Close, Room	4
Daruan	Plucked	China	A#2–F#5	Main, Close, Room	72
Sanxian	Plucked	China	A#2–D#5	Main, Close, Room	6
Yangqin	Plucked	China	G2–B6	Main, Close	3
Konghou	Plucked	China	G1–C#7	Main, Close, Room	7
Vietnamese zither	Plucked	Vietnam	B2–G6	Main, Close, Room	38
Monochord	Plucked	Vietnam	C#3–D#6	Main, Close, Room	37
Moon lute	Plucked	Vietnam	C#3–D#5	Main, Close, Room	39
Erhu	Bowed	China	G3–G6	Main, Close, Room	9
Banhu	Bowed	China	D5–C7	Main, Close, Room	12
Gaohu	Bowed	China	F#4–A6	Main, Close, Room	11
Zhonghu	Bowed	China	G3–A5	Main, Close, Room	10
Jinghu	Bowed	China	G#4–E6	Main, Close, Room	13
Morin khuur	Bowed	China	F#3–C6	Main, Close, Room	14
Bawu	Winds	China	D4–F5	Main, Close, Room	23
Sheng	Winds	China	G#4–D7	Main, Close, Room	20
Purple bamboo xiao	Winds	China	C4–F#6	Mix, Close, Main	100
Bangdi	Winds	China	G4–C#7	Mix, Close, Main	17
Qudi	Winds	China	F4–F#7	Main, Close, Room	16
Dadi	Winds	China	F3–F#6	Main, Close, Room	99
Green bamboo xiao	Winds	China	A3–F#6	Main, Close, Room	18
Guanzi	Winds	China	C#4–F#6	Main, Close, Room	24
Suona	Winds	China	G4–B6	Mix, Close, Main	19
Hulusi	Winds	China	F4–B5	Mix, Close, Main	21
Xun	Winds	China	F3–E5	Mix, Close, Main	22
Bamboo flute	Winds	Vietnam	C4–C7	Mix, Close, Main, Overhead, Room	49
Hmong flute	Winds	Vietnam	F#3–G#5	Main, Close, Room	53

Instrument	Family	Origin	Range	Mics	Program
Highstand drum (100 cm)	Percussion	China	C2–B2	Mix, Close, Overhead	75
Flowerpot drum (60 cm)	Percussion	China	C2–B2	Mix, Close, Overhead	76
Flat drum (45 cm)	Percussion	China	C2–B2	Mix, Close, Overhead	77
Paigu	Percussion	China	C3–B3	Mix, Close, Overhead	28
Bianzhong	Percussion	China	D2–G7	Main	35
Bianqing	Percussion	China	C5–G7	Main	74
Dagu	Percussion	China	C2–B2	Mix, Close, Overhead	25
Highstand drum ensemble (100 cm)	Percussion	China	C1–B1	Mix, Close, Overhead	78
Big drum ensemble (80 cm)	Percussion	China	C1–B1	Mix, Close, Overhead	79
Flowerpot drum ensemble (60 cm)	Percussion	China	C1–B1	Mix, Close, Overhead	80
Flat drum ensemble (45 cm)	Percussion	China	C1–B1	Mix, Close, Overhead	81
China gong (100 cm)	Percussion	China	C4–F4	Mix, Close, Overhead	82
Knobbed gong (100 cm)	Percussion	China	C4–F4	Mix, Close, Overhead	83
Wind gong (60 cm)	Percussion	China	C4–F4	Mix, Close, Overhead	84
China cymbals (50 cm)	Percussion	China	F#4–B4	Mix, Close, Overhead	85
Large cymbals (40 cm)	Percussion	China	F#4–B4	Mix, Close, Overhead	86
Strawhat cymbals (32 cm)	Percussion	China	F#4–B4	Mix, Close, Overhead	87
Water cymbals (30 cm)	Percussion	China	F#4–B4	Mix, Close, Overhead	88
Small cymbals (15 cm)	Percussion	China	F#4–B4	Mix, Close, Overhead	89
Singing bowl	Percussion	China	C5–F5	Mix, Close, Overhead	90
Temple bowl	Percussion	China	D#5–B5	Mix, Close, Overhead	91
Bells	Percussion	China	F#5–A5	Mix, Close, Overhead	92
Shaking bells	Percussion	China	G#5–B5	Mix, Close, Overhead	93
Muyu	Percussion	China	A5–B5	Mix, Close, Overhead	32
Rattle drum	Percussion	China	A#5	Mix, Close, Overhead	94
Bangzi	Percussion	China	A#5–B5	Mix, Close, Overhead	95
Opera percussion	Percussion	China	C6–B6	Mix, Close, Overhead	96
Dap (frame drum)	Percussion	China	C7–E7	Mix, Close, Overhead	97
Vocals and body percussion	Percussion	China	F7–B7	Mix, Close, Overhead	98

Program is the MIDI Program Change number of the instrument, counted from 0. Hosts that count programs from 1 show it one higher.

7. Plucked and struck strings

Guzheng

11 articulations · 3 mic positions · 4 velocity layers

The Chinese zither with 21 strings. A plucked note stops when the key is released, as when the player damps the string; use Let ring (A#0) or the sustain pedal for ringing passages. The Glissando keys play recorded phrases in D pentatonic.

Origin: China · **Range**: C2–D6 (best D2–D6) · **Microphones**: Main, Close, Room · **Voices**: polyphonic · **Program Change**: 0

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Pluck**	release damps	one stroke	velocity	whole range
C#0	**One press**	one vibrato press	one stroke	velocity	whole range
D0	**Tremolo**	soft even, hard expressive	while the key is held	velocity	whole range
D#0	**Bright pluck**	near the bridge, bright	one stroke	velocity	whole range
E0	**Slide down**	from a whole step above	one stroke	velocity	C3–D6
F0	**Bend up**	pressed up after the pluck	one stroke	velocity	C3–D6
F#0	**Harmonic**	sounding pitch C3–D7	one stroke	velocity	C3–D7
G#0	**Vibrato**	soft slow, hard fast	one stroke	velocity	whole range
A0	**Glissando**	one phrase per key C3–G5	one stroke	velocity	C3–G5
A#0	**Let ring**	rings on after release	one stroke	velocity	whole range
B0	**Bend & return**	quick press and release	one stroke	velocity	C3–D6

Also on this instrument: The sustain pedal (CC64) holds released notes.

Guqin

12 articulations · 3 mic positions · 3 velocity layers

The seven-string zither of the Chinese scholar: quiet, deep, full of slides and harmonics. Most keyswitches are recorded left-hand gestures. On Slide up and Slide down, a hard key (velocity 100 and above) slides and comes back.

Origin: China · **Range**: A#1–D6 (best C2–F5) · **Microphones**: Main, Close, Room · **Voices**: polyphonic · **Program Change**: 2

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Pluck**	open-string pitches ring open	one stroke	velocity	A#1–F5
C#0	**Scoop**	slides up into the note	one stroke	velocity	D2–E5
D0	**Wide vibrato**	scoop, then a wide swing	one stroke	velocity	C#2–F5
D#0	**Fall in**	slides down into the note	one stroke	velocity	C#2–F5
E0	**Slide up**	whole step; hard: and back	one stroke	velocity	C#2–C#5
F0	**Slide down**	whole step; hard: and back	one stroke	velocity	D#2–D#5
F#0	**Harmonic**	sounding pitch C3–D6	one stroke	velocity	C3–D6
G0	**Up a third**	a minor third after the pluck	one stroke	velocity	C#2–A#4
G#0	**Vibrato**	scoop, then a gentle swing	one stroke	velocity	C#2–F5
A0	**Down a third**	a minor third after the pluck	one stroke	velocity	E2–D#5
A#0	**Open string**	rings on, A#1–D#3	one stroke	velocity	A#1–D#3
B0	**Slow scoop**	slides slowly up into the note	one stroke	velocity	D2–F5

Also on this instrument: The sustain pedal (CC64) holds released notes.

Pipa

9 articulations · 3 mic positions · 3 velocity layers

The four-string Chinese lute. Tremolo (D0) and Expressive tremolo (A#0) sound for as long as the key is held. Hammer-ons and pull-offs are soft by nature: play them with high velocity.

Origin: China · **Range**: A2–E6 (best A2–A5) · **Microphones**: Main, Close, Room · **Voices**: polyphonic · **Program Change**: 1

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Pluck**	3 velocity layers	one stroke	velocity	A2–D6
D0	**Tremolo**	held as long as the key	while the key is held	velocity	A2–D6
E0	**Slide up**	a whole step after the pluck	one stroke	velocity	A#2–D#5
F0	**Slide down**	a whole step after the pluck	one stroke	velocity	C3–D#5
F#0	**Harmonic**	sounding pitch A3–E6	one stroke	velocity	A3–E6
G0	**Hammer-on**	left hand, B2–C5	one stroke	velocity	B2–C5
G#0	**Pull-off**	left hand, A#2–G5	one stroke	velocity	A#2–G5
A#0	**Expressive trem.**	with dynamics and vibrato	while the key is held	velocity	A2–D6
B0	**Push & return**	a quick push up and back	one stroke	velocity	A#2–C6

Also on this instrument: The sustain pedal (CC64) holds released notes.

Liuqin

4 articulations · 3 mic positions

A small, high lute with a sparkling tone. Hold a key on Tremolo (D0) for a sustained melody line.

Origin: China · **Range**: F#3–A#6 (best F#3–G#6) · **Microphones**: Main, Close, Room · **Voices**: polyphonic · **Program Change**: 5

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Pluck**	velocity = loudness	one stroke	velocity	F#3–D#6
D0	**Tremolo**	held as long as the key	while the key is held	velocity	F#3–D#6
F0	**Vibrato pluck**	plucked, then vibrato	one stroke	velocity	F#3–D#6
F#0	**Harmonic**	a bell-like harmonic	one stroke	velocity	F#4–A#6

Also on this instrument: The sustain pedal (CC64) holds released notes.

Zhongruan

3 articulations · 3 mic positions

The round-bodied tenor lute, warm and mellow: for chords, bass figures and tremolo melodies.

Origin: China · **Range**: A#2–D#6 (best A#2–C#6) · **Microphones**: Main, Close, Room · **Voices**: polyphonic · **Program Change**: 4

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Pluck**	velocity = loudness	one stroke	velocity	whole range
D0	**Tremolo**	held as long as the key	while the key is held	velocity	whole range
E0	**Grace up**	a grace from below	one stroke	velocity	A#2–F5

Also on this instrument: The sustain pedal (CC64) holds released notes.

Daruan

4 articulations · 3 mic positions

The bass member of the ruan family: the same round, warm tone an octave lower in spirit, for bass lines and slow tremolo.

Origin: China · **Range**: A#2–F#5 (best A#2–E5) · **Microphones**: Main, Close, Room · **Voices**: polyphonic · **Program Change**: 72

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Pluck**	velocity = loudness	one stroke	velocity	whole range
D0	**Tremolo**	held as long as the key	while the key is held	velocity	whole range
E0	**Grace up**	a grace from below	one stroke	velocity	A#2–D#5
F#0	**Harmonic**	a bell-like harmonic	one stroke	velocity	C#3–A#4

Also on this instrument: The sustain pedal (CC64) holds released notes.

Sanxian

5 articulations · 3 mic positions

The three-string fretless lute with a snakeskin head: dry, percussive, with its characteristic slides.

Origin: China · **Range**: A#2–D#5 (best A#2–C#5) · **Microphones**: Main, Close, Room · **Voices**: polyphonic · **Program Change**: 6

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Pluck**	velocity = loudness	one stroke	velocity	A#2–C#5
D0	**Tremolo**	held as long as the key	while the key is held	velocity	whole range
F0	**Vibrato pluck**	plucked, then vibrato	one stroke	velocity	A#2–C#5
F#0	**Harmonic**	a bell-like harmonic	one stroke	velocity	F#3–A#4
B0	**Slide down**	plucked, then slides down	one stroke	velocity	C#4–D#5

Also on this instrument: The sustain pedal (CC64) holds released notes.

Yangqin

12 articulations · 2 mic positions · 5 velocity layers

The Chinese hammered dulcimer. Releasing a key damps the strings with the hand and the sustain pedal (CC64) works the dampers, as on the instrument. The Arpeggio keys play recorded figures that end on the key you press. On Bounce (B0), a soft key gives 2-3 strokes and a hard key 3-5.

Origin: China · **Range**: G2–B6 (best G2–A6) · **Microphones**: Main, Close · **Voices**: polyphonic · **Program Change**: 3

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Strike**	5 velocity layers	one stroke	velocity	G2–A6
C#0	**Short**	one short stroke	one stroke	velocity	G2–A6
D0	**Tremolo**	held as long as the key	while the key is held	velocity	G2–A6
D#0	**Reverse hammer**	the hammer's back, brighter	one stroke	velocity	G2–A6
E0	**Arpeggio up**	4 strokes, ends on the key	one stroke	velocity	G3–A6
F0	**Tremolo in 3rds**	with the 3rd below, a swell	one stroke	velocity	B2–A6
F#0	**Harmonic**	sounding pitch G3–B6	one stroke	velocity	G3–B6
G0	**Octave tremolo**	the key and its octave	while the key is held	velocity	G2–A5
G#0	**Muted**	struck on damped strings	one stroke	velocity	G2–G6
A0	**Arpeggio down**	4 strokes, ends on the key	one stroke	velocity	G2–A5
A#0	**Arpeggio 2 oct**	8 strokes up, ends on the key	one stroke	velocity	G4–A6
B0	**Bounce**	soft: 2–3 strokes · hard: 3–5	one stroke	velocity	G2–A6

Also on this instrument: The sustain pedal (CC64) holds released notes.

Konghou

8 articulations · 3 mic positions · 3 velocity layers

The Chinese concert harp. Arpeggio up and Arpeggio down play rolled chords, and the octave you play in chooses the chord type. Effects (G0) puts glissandos, a mute and strikes on the body on the keys C6-A6.

Origin: China · **Range**: G1–C#7 (best G1–B6) · **Microphones**: Main, Close, Room · **Voices**: polyphonic · **Program Change**: 7

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Pluck**	3 velocity layers	one stroke	velocity	G1–B6
D0	**Tremolo**	soft even, hard expressive	while the key is held	velocity	G1–B6
E0	**Arpeggio up**	a chord type per octave	one stroke	velocity	C2–B6
F0	**Vibrato**	pluck, then vibrato	one stroke	velocity	A2–B6
F#0	**Harmonic**	sounding pitch G2–C#7	one stroke	velocity	G2–C#7
G0	**Effects**	C6–A6: glisses, mute, body	one stroke	velocity	see the key map
A0	**Arpeggio down**	a chord type per octave	one stroke	velocity	C2–B6
A#0	**Short tremolo**	half a second, then rings	one stroke	velocity	G1–B6

Key map of Effects (G0)

Key	Sound	How it plays
C6	Gliss up	rings on after the key is released
C#6	Gliss down	rings on after the key is released
D6	Glisses up	rings on after the key is released
D#6	Glisses down	rings on after the key is released
E6	Gliss up and down	rings on after the key is released
F6	Gliss down and up	rings on after the key is released
F#6	Free gliss	rings on after the key is released
G6	Mute	rings on after the key is released
G#6	Heel on the body	rings on after the key is released
A6	Palm on the body	rings on after the key is released

Also on this instrument: The sustain pedal (CC64) holds released notes.

Vietnamese zither

8 articulations · 3 mic positions

The Vietnamese zither with steel strings, brighter and more supple than the guzheng. The left-hand ornaments are on the keyswitches: press, bend, vibrato, bend and return. On Bend up, a soft key bends a whole tone and a hard key (velocity 100 and above) a semitone.

Origin: Vietnam · **Range**: B2–G6 (best B2–F6) · **Microphones**: Main, Close, Room · **Voices**: polyphonic · **Program Change**: 38

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Pluck**	velocity = loudness	one stroke	velocity	whole range
C#0	**One press**	one vibrato press	one stroke	velocity	whole range
E0	**Slide down**	from a whole step above	one stroke	velocity	whole range
F0	**Bend up**	soft: a tone · hard: a semitone	one stroke	velocity	whole range
G#0	**Vibrato**	soft slow, hard fast	one stroke	velocity	whole range
A0	**Glissando**	one phrase per key C4–A#4	one stroke	velocity	C4–A#4
A#0	**Let ring**	rings on after release	one stroke	velocity	whole range
B0	**Bend & return**	quick press and release	one stroke	velocity	whole range

Also on this instrument: The sustain pedal (CC64) holds released notes.

Monochord

6 articulations · 3 mic positions

The Vietnamese monochord: a single string played in harmonics, its pitch bent by a flexible rod. On Bend up, a soft key bends a whole tone and a hard key a minor third.

Origin: Vietnam · **Range**: C#3–D#6 (best C#3–C#6) · **Microphones**: Main, Close, Room · **Voices**: polyphonic · **Program Change**: 37

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Pluck**	velocity = loudness	one stroke	velocity	whole range
E0	**Slide down**	from a whole step above	one stroke	velocity	whole range
F0	**Bend up**	soft: a tone · hard: a minor third	one stroke	velocity	whole range
G#0	**Vibrato**	rod wiggle, soft slow, hard fast	one stroke	velocity	whole range
A#0	**Let ring**	rings on after release	one stroke	velocity	whole range
B0	**Bend & return**	quick press and release	one stroke	velocity	whole range

Also on this instrument: The sustain pedal (CC64) holds released notes.

Moon lute

6 articulations · 3 mic positions

The Vietnamese moon lute: two strings and high frets, which make deep bends easy.

Origin: Vietnam · **Range**: C#3–D#5 (best C#3–C#5) · **Microphones**: Main, Close, Room · **Voices**: polyphonic · **Program Change**: 39

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Pluck**	velocity = loudness	one stroke	velocity	whole range
E0	**Slide down**	from a whole step above	one stroke	velocity	whole range
F0	**Bend up**	soft: a tone · hard: a semitone	one stroke	velocity	whole range
G#0	**Vibrato**	soft slow, hard fast	one stroke	velocity	whole range
A#0	**Let ring**	rings on after release	one stroke	velocity	whole range
B0	**Bend & return**	quick press and release	one stroke	velocity	whole range

Also on this instrument: The sustain pedal (CC64) holds released notes.

8. Bowed strings

Erhu

11 articulations · 3 mic positions · live vibrato and slides

The two-string Chinese fiddle, the closest of all to a singing voice. Its vibrato is played live by the engine: CC2 sets the depth, CC21 the speed. On Legato, a soft key (velocity up to 80) slides into the next note as a singer would and a hard key changes finger crisply. Portamento joins any two notes up to an octave apart; CC5 sets the time of the slide.

Origin: China · **Range**: G3–G6 (best D4–D6) · **Microphones**: Main, Close, Room · **Voices**: one note at a time (overlapping notes are joined) · **Program Change**: 9 · **Look-ahead**: 250 ms

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Legato**	overlap = slur · vibrato CC2	while the key is held	CC1	whole range
C#0	**Short**	short detached bow	one stroke	velocity	whole range
D0	**Wide vibrato**	about a semitone wide	while the key is held	CC1	whole range
D#0	**Fall in**	slides down into the note	while the key is held	CC1	whole range
E0	**Portamento**	overlap = slide	while the key is held	CC1	whole range
F0	**Swell**	grows over ~3 s · vibrato	while the key is held	CC1	whole range
F#0	**Scoop**	slides up into the note	while the key is held	CC1	whole range
G0	**Accent**	strong start, then fades	while the key is held	velocity	whole range
G#0	**Recorded vibrato**	the player's own vibrato	while the key is held	CC1	whole range
A#0	**Plain long**	no vibrato	while the key is held	CC1	whole range
B0	**Staccatissimo**	very short	one stroke	velocity	whole range

Also on this instrument: Overlap two notes to join them; leave a gap to start a new note. CC2 sets the depth of the vibrato and CC21 its speed (on the articulations with a live vibrato). CC5 sets the time of the slides.

Banhu

12 articulations · 3 mic positions · live vibrato and slides

A bright, piercing fiddle with a wooden soundboard, the lead voice of northern Chinese opera. It plays like the erhu, with a tremolo and two trills added.

Origin: China · **Range**: D5–C7 (best D5–G6) · **Microphones**: Main, Close, Room · **Voices**: one note at a time (overlapping notes are joined) · **Program Change**: 12 · **Look-ahead**: 250 ms

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Legato**	overlap = slur · vibrato CC2	while the key is held	CC1	whole range
C#0	**Staccato**	short detached bow	one stroke	velocity	whole range
D0	**Tremolo**	fast bow strokes	while the key is held	CC1	whole range
D#0	**Fall in**	slides down into the note	while the key is held	CC1	F#5–C7
E0	**Portamento**	overlap = slide	while the key is held	CC1	whole range
F0	**Whole trill**	with the note a tone above	while the key is held	CC1	D5–A#6
F#0	**Scoop**	slides up into the note	while the key is held	CC1	F#5–A#6
G0	**Accent**	strong start, then fades	while the key is held	velocity	whole range
G#0	**Recorded vibrato**	the player's own vibrato	while the key is held	CC1	D5–A#6
A0	**Half trill**	with the note a semitone above	while the key is held	CC1	D5–A6
A#0	**Plain long**	no vibrato	while the key is held	CC1	whole range
B0	**Spiccato**	bouncing bow, very short	one stroke	velocity	whole range

Also on this instrument: Overlap two notes to join them; leave a gap to start a new note. CC2 sets the depth of the vibrato and CC21 its speed (on the articulations with a live vibrato). CC5 sets the time of the slides.

Gaohu

11 articulations · 3 mic positions · live vibrato and slides

The high fiddle of Cantonese music: sweeter and lighter than the erhu.

Origin: China · **Range**: F#4–A6 (best F#4–G6) · **Microphones**: Main, Close, Room · **Voices**: one note at a time (overlapping notes are joined) · **Program Change**: 11 · **Look-ahead**: 250 ms

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Legato**	overlap = slur · vibrato CC2	while the key is held	CC1	whole range
C#0	**Staccato**	short detached bow	one stroke	velocity	F#4–G#6
D0	**Tremolo**	fast bow strokes	while the key is held	CC1	whole range
D#0	**Fall in**	slides down into the note	while the key is held	CC1	F#4–G#6
E0	**Portamento**	overlap = slide	while the key is held	CC1	whole range
F0	**Whole trill**	with the note a tone above	while the key is held	CC1	F#4–F#6
F#0	**Scoop**	slides up into the note	while the key is held	CC1	G#4–G#6
G#0	**Recorded vibrato**	the player's own vibrato	while the key is held	CC1	whole range
A0	**Half trill**	with the note a semitone above	while the key is held	CC1	A#4–F6
A#0	**Plain long**	no vibrato	while the key is held	CC1	whole range
B0	**Swell**	grows within one bow	while the key is held	CC1	F#4–G#6

Also on this instrument: Overlap two notes to join them; leave a gap to start a new note. CC2 sets the depth of the vibrato and CC21 its speed (on the articulations with a live vibrato). CC5 sets the time of the slides.

Zhonghu

12 articulations · 3 mic positions · live vibrato and slides

The alto fiddle: darker and rounder than the erhu, for inner voices and warm low melodies.

Origin: China · **Range**: G3–A5 (best G3–G5) · **Microphones**: Main, Close, Room · **Voices**: one note at a time (overlapping notes are joined) · **Program Change**: 10 · **Look-ahead**: 250 ms

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Legato**	overlap = slur · vibrato CC2	while the key is held	CC1	whole range
C#0	**Short**	a short bow, a little longer	one stroke	velocity	whole range
D0	**Tremolo**	fast bow strokes	while the key is held	CC1	whole range
D#0	**Fall in**	slides down into the note	while the key is held	CC1	G3–G5
E0	**Portamento**	overlap = slide	while the key is held	CC1	whole range
F0	**Whole trill**	with the note a tone above	while the key is held	CC1	G3–G5
F#0	**Scoop**	slides up into the note	while the key is held	CC1	B3–G#5
G0	**Accent**	strong start, then fades	while the key is held	velocity	whole range
G#0	**Recorded vibrato**	the player's own vibrato	while the key is held	CC1	whole range
A0	**Half trill**	with the note a semitone above	while the key is held	CC1	A3–F#5
A#0	**Plain long**	no vibrato	while the key is held	CC1	whole range
B0	**Staccato**	short detached bow	one stroke	velocity	whole range

Also on this instrument: Overlap two notes to join them; leave a gap to start a new note. CC2 sets the depth of the vibrato and CC21 its speed (on the articulations with a live vibrato). CC5 sets the time of the slides.

Jinghu

12 articulations · 3 mic positions · live slides

The small, sharp fiddle of Peking opera. Its voice is direct, with little vibrato; slow and fast trills are its ornaments.

Origin: China · **Range**: G#4–E6 (best G#4–D6) · **Microphones**: Main, Close, Room · **Voices**: one note at a time (overlapping notes are joined) · **Program Change**: 13 · **Look-ahead**: 250 ms

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Legato**	overlap = slur · vibrato CC2	while the key is held	CC1	G#4–D#6
C#0	**Staccato**	short detached bow	one stroke	velocity	G#4–D#6
D0	**Tremolo**	fast bow strokes	while the key is held	CC1	whole range
D#0	**Fall in**	slides down into the note	while the key is held	CC1	G#4–C#6
E0	**Portamento**	overlap = slide	while the key is held	CC1	G#4–D#6
F0	**Whole trill**	with the note a tone above	while the key is held	CC1	G#4–C#6
F#0	**Scoop**	slides up into the note	while the key is held	CC1	A#4–D#6
G0	**Accent**	strong start, then fades	while the key is held	velocity	G#4–D#6
G#0	**Slow trill**	a slower trill	while the key is held	CC1	G#4–A#5
A0	**Half trill**	with the note a semitone above	while the key is held	CC1	G#4–A#5
A#0	**Plain long**	no vibrato	while the key is held	CC1	G#4–D#6
B0	**Slow half trill**	slower, a semitone above	while the key is held	CC1	G#4–C6

Also on this instrument: Overlap two notes to join them; leave a gap to start a new note. CC2 sets the depth of the vibrato and CC21 its speed (on the articulations with a live vibrato). CC5 sets the time of the slides.

Morin khuur

12 articulations · 3 mic positions · live vibrato and slides

The horse-head fiddle of the Mongolian steppe: a broad, grainy tone. Bowed harmonics (F#0) and the third trill (A0) belong to its style; B0 is a pizzicato.

Origin: China · **Range**: F#3–C6 (best F#3–A#5) · **Microphones**: Main, Close, Room · **Voices**: one note at a time (overlapping notes are joined) · **Program Change**: 14 · **Look-ahead**: 250 ms

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Legato**	overlap = slur · vibrato CC2	while the key is held	CC1	whole range
C#0	**Staccato**	short detached bow	one stroke	velocity	whole range
D0	**Short**	a short bow, a little longer	one stroke	velocity	whole range
D#0	**Fall in**	slides down into the note	while the key is held	CC1	F#3–F#5
E0	**Portamento**	overlap = slide	while the key is held	CC1	whole range
F0	**Whole trill**	with the note a tone above	while the key is held	CC1	G3–C6
F#0	**Harmonic**	a bowed harmonic	while the key is held	CC1	F#4–C6
G0	**Accent**	strong start, then fades	while the key is held	velocity	whole range
G#0	**Recorded vibrato**	the player's own vibrato	while the key is held	CC1	whole range
A0	**Third trill**	a third above, by the scale	while the key is held	CC1	whole range
A#0	**Plain long**	no vibrato	while the key is held	CC1	whole range
B0	**Pizzicato**	plucked with a finger	one stroke	velocity	F#3–C#5

Also on this instrument: Overlap two notes to join them; leave a gap to start a new note. CC2 sets the depth of the vibrato and CC21 its speed (on the articulations with a live vibrato). CC5 sets the time of the slides.

9. Winds

Bawu

9 articulations · 3 mic positions · live vibrato and slides

A free-reed pipe from Yunnan with a soft voice like a clarinet, and a range of little more than an octave.

Origin: China · **Range**: D4–F5 (best D4–D#5) · **Microphones**: Main, Close, Room · **Voices**: one note at a time (overlapping notes are joined) · **Program Change**: 23 · **Look-ahead**: 250 ms

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Legato**	overlap = slur · vibrato CC2	while the key is held	CC1	whole range
C#0	**Staccato**	single-tongued, short	one stroke	velocity	whole range
E0	**Portamento**	overlap = slide	while the key is held	CC1	whole range
F0	**Whole trill**	with the note a tone above	while the key is held	CC1	D4–D#5
F#0	**Scoop**	slides up into the note	while the key is held	CC1	D#4–F5
G0	**Accent**	strong start, then fades	while the key is held	velocity	whole range
G#0	**Recorded vibrato**	the player's own vibrato	while the key is held	CC1	D#4–F5
A0	**Fall in**	slides down into the note	while the key is held	CC1	D4–D#5
A#0	**Plain long**	no vibrato	while the key is held	CC1	whole range

Also on this instrument: Overlap two notes to join them; leave a gap to start a new note. CC2 sets the depth of the vibrato and CC21 its speed (on the articulations with a live vibrato). CC5 sets the time of the slides.

Sheng

8 articulations · 3 mic positions

The Chinese mouth organ. This bank plays one voice at a time; the Chord keyswitch (D#0) plays recorded chords.

Origin: China · **Range**: G#4–D7 (best G#4–C7) · **Microphones**: Main, Close, Room · **Voices**: one note at a time (overlapping notes are joined) · **Program Change**: 20 · **Look-ahead**: 250 ms

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Legato**	overlap = slur · vibrato CC2	while the key is held	CC1	whole range
C#0	**Staccato**	single-tongued, short	one stroke	velocity	whole range
D0	**Flutter**	flutter tongue	while the key is held	CC1	whole range
D#0	**Chord**	a recorded chord	one stroke	velocity	whole range
E0	**Portamento**	overlap = slide	while the key is held	CC1	whole range
G0	**Forte-piano**	strong, then soft	while the key is held	velocity	whole range
G#0	**Recorded vibrato**	the player's own vibrato	while the key is held	CC1	whole range
A#0	**Plain long**	no vibrato	while the key is held	CC1	whole range

Also on this instrument: Overlap two notes to join them; leave a gap to start a new note. CC2 sets the depth of the vibrato and CC21 its speed (on the articulations with a live vibrato). CC5 sets the time of the slides.

Purple bamboo xiao

12 articulations · 3 mic positions · slurs at three speeds

The purple bamboo xiao, an end-blown flute with a dark, breathy, meditative tone. Slurs are recorded at three speeds: on Legato a soft key slurs slowly and a hard key fast. Several keyswitches can be pressed while a note is held, to continue it with vibrato, a trill, an octave flick or a cry.

Origin: China · **Range**: C4–F#6 (best D4–E6) · **Microphones**: Mix, Close, Main · **Voices**: one note at a time (overlapping notes are joined) · **Program Change**: 100 · **Look-ahead**: 120 ms

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Legato**	soft slow, hard fast	while the key is held	CC1	whole range
C#0	**Short**	single tongue	one stroke	velocity	whole range
D0	**Vibrato**	the recorded breath vibrato	while the key is held	CC1	whole range
D#0	**Fast vibrato**	a faster breath vibrato	while the key is held	CC1	whole range
E0	**Slide**	soft up, hard down	while the key is held	velocity	C4–E6
F0	**Trill**	soft 2nd, hard 3rd	while the key is held	velocity	whole range
F#0	**Grace**	soft from below, hard from above	while the key is held	velocity	C4–E6
G0	**Octave flick**	a flash of the octave	while the key is held	CC1	whole range
G#0	**Cry**	a sob in the note	while the key is held	CC1	whole range
A0	**Fall**	ends with a fall	while the key is held	CC1	whole range
A#0	**Plain**	no vibrato	while the key is held	CC1	whole range
B0	**Staccatissimo**	shorter, for fast runs	one stroke	velocity	whole range

Also on this instrument: Overlap two notes to join them; leave a gap to start a new note. CC2 sets the depth of the vibrato and CC21 its speed (on the articulations with a live vibrato). CC5 sets the time of the slides.

Bangdi

11 articulations · 3 mic positions · 3-layer tonguing

The short, high bamboo flute of northern China: brilliant and lively, made for fast tonguing, grace notes and runs.

Origin: China · **Range**: G4–C#7 (best A4–B6) · **Microphones**: Mix, Close, Main · **Voices**: one note at a time (overlapping notes are joined) · **Program Change**: 17 · **Look-ahead**: 100 ms

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Legato**	hard: with a grace note	while the key is held	CC1	whole range
C#0	**Short**	3 velocity layers	one stroke	velocity	whole range
D0	**Flutter**	flutter tongue	while the key is held	CC1	A#4–C#7
D#0	**Double tongue**	fast repeats	one stroke	velocity	whole range
E0	**Slide**	soft up, hard down	while the key is held	velocity	A4–B6
F0	**Trill**	soft 2nd, hard 3rd	while the key is held	velocity	G4–F#6
F#0	**Grace**	soft from below, hard from above	while the key is held	velocity	whole range
G0	**Mordent**	soft upper, hard lower	while the key is held	velocity	whole range
G#0	**Pre-trill**	a trill, then the note	while the key is held	CC1	whole range
A0	**Run up**	a run up into the note	while the key is held	CC1	whole range
A#0	**Plain**	no vibrato	while the key is held	CC1	whole range

Also on this instrument: Overlap two notes to join them; leave a gap to start a new note. CC2 sets the depth of the vibrato and CC21 its speed (on the articulations with a live vibrato). CC5 sets the time of the slides.

Qudi

11 articulations · 3 mic positions · 4 dynamic layers

The longer, mellower bamboo flute of southern China. Long notes have four recorded dynamic layers on CC1. Effects (A0) puts bird calls, breath and knocks on the keys C4-F#4.

Origin: China · **Range**: F4–F#7 (best G4–E7) · **Microphones**: Main, Close, Room · **Voices**: one note at a time (overlapping notes are joined) · **Program Change**: 16 · **Look-ahead**: 60 ms

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Legato**	4 dynamic layers, CC1	while the key is held	CC1	whole range
C#0	**Short**	soft or hard tongue	one stroke	velocity	whole range
D#0	**Detached**	about 0.6 s	one stroke	velocity	whole range
E0	**Slide**	soft up, hard down	while the key is held	velocity	F4–D7
F0	**Trill**	soft 2nd, hard 3rd	while the key is held	velocity	F4–B6
F#0	**Grace**	soft from below, hard from above	while the key is held	velocity	F4–E7
G0	**Accent**	a tongued long note	while the key is held	velocity	whole range
G#0	**Pre-trill**	a trill, then the note	while the key is held	CC1	F4–E7
A0	**Effects**	C4–F#4: birds, breath, knock	one stroke	velocity	see the key map
A#0	**Plain**	no vibrato	while the key is held	CC1	whole range
B0	**Espressivo**	soft slow swell, hard quick	while the key is held	velocity	whole range

Key map of Effects (A0)

Key	Sound	How it plays
C4	Bird 1	rings on after the key is released
C#4	Bird 2	rings on after the key is released
D4	Breath	rings on after the key is released
D#4	Knock on the tube	rings on after the key is released
E4	Impulse 1	rings on after the key is released
F4	Impulse 2	rings on after the key is released
F#4	Impulse 3	rings on after the key is released

Also on this instrument: Overlap two notes to join them; leave a gap to start a new note. CC2 sets the depth of the vibrato and CC21 its speed (on the articulations with a live vibrato). CC5 sets the time of the slides.

Dadi

11 articulations · 3 mic positions · 4 dynamic layers

The large, low bamboo flute: broad and calm, with four recorded dynamic layers on CC1.

Origin: China · **Range**: F3–F#6 (best G3–E6) · **Microphones**: Main, Close, Room · **Voices**: one note at a time (overlapping notes are joined) · **Program Change**: 99 · **Look-ahead**: 60 ms

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Legato**	4 dynamic layers, CC1	while the key is held	CC1	whole range
C#0	**Short**	about half a second	one stroke	velocity	whole range
D0	**Sforzando**	strong, back, swells again	while the key is held	velocity	whole range
E0	**Slide**	soft up, hard down	while the key is held	velocity	F3–D6
F0	**Trill**	soft 2nd, hard 3rd	while the key is held	velocity	F3–D6
F#0	**Grace**	soft from below, hard from above	while the key is held	velocity	F3–E6
G0	**Accent**	a tongued long note	while the key is held	velocity	whole range
G#0	**Pre-trill**	a trill, then the note	while the key is held	CC1	whole range
A0	**Effects**	C4 breath, C#4 knock	one stroke	velocity	see the key map
A#0	**Plain**	no vibrato	while the key is held	CC1	whole range
B0	**Espressivo**	soft slow swell, hard quick	while the key is held	velocity	G3–F#6

Key map of Effects (A0)

Key	Sound	How it plays
C4	Breath	rings on after the key is released
C#4	Knock on the tube	rings on after the key is released

Also on this instrument: Overlap two notes to join them; leave a gap to start a new note. CC2 sets the depth of the vibrato and CC21 its speed (on the articulations with a live vibrato). CC5 sets the time of the slides.

Green bamboo xiao

10 articulations · 3 mic positions · 4 dynamic layers

The green bamboo xiao: a lighter, clearer end-blown flute than the purple one. Long notes have four recorded dynamic layers on CC1.

Origin: China · **Range**: A3–F#6 (best B3–E6) · **Microphones**: Main, Close, Room · **Voices**: one note at a time (overlapping notes are joined) · **Program Change**: 18 · **Look-ahead**: 60 ms

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Legato**	4 dynamic layers, CC1	while the key is held	CC1	whole range
C#0	**Short**	single tongue	one stroke	velocity	whole range
D#0	**Repeated tongue**	fast repeats on one note	one stroke	velocity	whole range
E0	**Slide**	soft up, hard down	while the key is held	velocity	A#3–E6
F0	**Trill**	soft 2nd, hard 3rd	while the key is held	velocity	A3–D6
F#0	**Grace**	soft from below, hard from above	while the key is held	velocity	A3–E6
G0	**Accent**	a tongued long note	while the key is held	velocity	whole range
G#0	**Swell**	a slow rise and fall	while the key is held	CC1	whole range
A0	**Effects**	C4 breath, C#4 knock	one stroke	velocity	see the key map
A#0	**Plain**	no vibrato	while the key is held	CC1	whole range

Key map of Effects (A0)

Key	Sound	How it plays
C4	Breath	rings on after the key is released
C#4	Knock on the tube	rings on after the key is released

Also on this instrument: Overlap two notes to join them; leave a gap to start a new note. CC2 sets the depth of the vibrato and CC21 its speed (on the articulations with a live vibrato). CC5 sets the time of the slides.

Guanzi

8 articulations · 3 mic positions · live vibrato and slides

A short double-reed pipe with a strong, nasal, mournful voice.

Origin: China · **Range**: C#4–F#6 (best C#4–E6) · **Microphones**: Main, Close, Room · **Voices**: one note at a time (overlapping notes are joined) · **Program Change**: 24 · **Look-ahead**: 250 ms

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Legato**	overlap = slur · vibrato CC2	while the key is held	CC1	C#4–F6
D0	**Flutter**	flutter tongue	while the key is held	CC1	C#4–F#5
E0	**Portamento**	overlap = slide	while the key is held	CC1	C#4–F6
F#0	**Scoop**	slides up into the note	while the key is held	CC1	D#4–F6
G#0	**Recorded vibrato**	the player's own vibrato	while the key is held	CC1	whole range
A0	**Swell**	grows within one bow	while the key is held	CC1	C#4–F6
A#0	**Plain long**	no vibrato	while the key is held	CC1	C#4–F6
B0	**Fp swell**	strong, soft, then grows	while the key is held	CC1	C#4–F6

Also on this instrument: Overlap two notes to join them; leave a gap to start a new note. CC2 sets the depth of the vibrato and CC21 its speed (on the articulations with a live vibrato). CC5 sets the time of the slides.

Suona

11 articulations · 3 mic positions · flutter and growl

The Chinese shawm: loud, festive and penetrating. Flutter and Growl give it its wild edge.

Origin: China · **Range**: G4–B6 (best A4–A6) · **Microphones**: Mix, Close, Main · **Voices**: one note at a time (overlapping notes are joined) · **Program Change**: 19 · **Look-ahead**: 200 ms

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Legato**	soft slow, hard fast	while the key is held	CC1	whole range
C#0	**Short**	single tongue	one stroke	velocity	G4–A6
D0	**Flutter**	flutter, slurs too	while the key is held	CC1	whole range
D#0	**Growl**	a throat growl	while the key is held	CC1	whole range
E0	**Portamento**	overlap = slide, 3 speeds	while the key is held	CC1	whole range
F0	**Trill**	soft 2nd, hard 3rd	while the key is held	velocity	G4–G#6
F#0	**Grace**	soft from below, hard from above	while the key is held	velocity	G4–A6
G#0	**Vibrato**	the recorded vibrato	while the key is held	CC1	whole range
A0	**Fall**	ends with a fall	while the key is held	CC1	whole range
A#0	**Plain**	no vibrato	while the key is held	CC1	whole range
B0	**Staccatissimo**	shorter, for fast runs	one stroke	velocity	G4–A6

Also on this instrument: Overlap two notes to join them; leave a gap to start a new note. CC2 sets the depth of the vibrato and CC21 its speed (on the articulations with a live vibrato). CC5 sets the time of the slides.

Hulusi

10 articulations · 3 mic positions · drones

The gourd flute of Yunnan, sweet and gentle. Drone (A0) adds the held drone pipes on the keys A4 and E5.

Origin: China · **Range**: F4–B5 (best G4–A5) · **Microphones**: Mix, Close, Main · **Voices**: one note at a time (overlapping notes are joined) · **Program Change**: 21 · **Look-ahead**: 150 ms

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Legato**	soft slow, hard fast	while the key is held	CC1	whole range
C#0	**Short**	2 velocity layers	one stroke	velocity	whole range
D#0	**Double tongue**	fast repeats	one stroke	velocity	whole range
E0	**Portamento**	overlap = slide, 3 speeds	while the key is held	CC1	whole range
F0	**Trill**	a trill on the 2nd	while the key is held	CC1	whole range
F#0	**Grace**	soft from below, hard from above	while the key is held	velocity	whole range
G#0	**Vibrato**	the recorded vibrato	while the key is held	CC1	whole range
A0	**Drone**	A4, E5: held drones	one stroke	velocity	see the key map
A#0	**Plain**	no vibrato	while the key is held	CC1	whole range

Key map of Drone (A0)

Key	Sound	How it plays
A4	Drone A4	sounds while the key is held
E5	Drone E5	sounds while the key is held

Also on this instrument: Overlap two notes to join them; leave a gap to start a new note. CC2 sets the depth of the vibrato and CC21 its speed (on the articulations with a live vibrato). CC5 sets the time of the slides.

Xun

11 articulations · 3 mic positions · the crying voice

The clay vessel flute, one of the oldest Chinese instruments: hollow, dark and sorrowful.

Origin: China · **Range**: F3–E5 (best G3–D5) · **Microphones**: Mix, Close, Main · **Voices**: one note at a time (overlapping notes are joined) · **Program Change**: 22 · **Look-ahead**: 200 ms

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Legato**	soft slow, hard fast	while the key is held	CC1	G3–E5
C#0	**Short**	single tongue	one stroke	velocity	G3–E5
D0	**Vibrato**	the recorded vibrato	while the key is held	CC1	G3–E5
D#0	**Cry vibrato**	a sobbing vibrato	while the key is held	CC1	G3–E5
E0	**Portamento**	overlap = slide	while the key is held	CC1	G3–E5
F0	**Trill**	soft 2nd, hard 3rd	while the key is held	velocity	G3–G#4
F#0	**Grace**	soft from below, hard from above	while the key is held	velocity	G3–B4
G0	**Crying line**	sobbing attack, slurs, end	while the key is held	CC1	G3–E5
A0	**Fall**	ends with a fall	while the key is held	CC1	G3–E5
A#0	**Plain**	no vibrato	while the key is held	CC1	G3–E5
B0	**Staccatissimo**	shorter, for fast runs	one stroke	velocity	G3–E5

Also on this instrument: Overlap two notes to join them; leave a gap to start a new note. CC2 sets the depth of the vibrato and CC21 its speed (on the articulations with a live vibrato). CC5 sets the time of the slides.

Bamboo flute

21 articulations · 5 mic positions · true legato

The Vietnamese bamboo flute, bright and agile. This is the fullest bank in Yuefu: five microphone positions and recorded legato between the notes. Overlap two notes for a slur, and shape long notes with CC1.

Origin: Vietnam · **Range**: C4–C7 (best D4–A6) · **Microphones**: Mix, Close, Main, Overhead, Room · **Voices**: one note at a time (overlapping notes are joined) · **Program Change**: 49 · **Look-ahead**: 100 ms

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Legato**	overlap = slur · breath vibrato	while the key is held	CC1	whole range
C#0	**Short**	single tongue	one stroke	velocity	whole range
D0	**Flutter**	flutter tongue	while the key is held	CC1	whole range
D#0	**Double tongue**	fast repeats	one stroke	velocity	whole range
F0	**Trill**	whole step	while the key is held	CC1	whole range
F#0	**Trill**	half step	while the key is held	CC1	whole range
G0	**Accent**	marcato	while the key is held	velocity	whole range
A0	**Sforzando**	sudden accent	one stroke	velocity	whole range
A#0	**Plain long**	no vibrato	while the key is held	CC1	whole range
B0	**Staccatissimo**	very short	one stroke	velocity	whole range

Also on this instrument: Overlap two notes to join them; leave a gap to start a new note.

Hmong flute

5 articulations · 3 mic positions · live vibrato and slides

The Hmong free-reed flute of the northern mountains of Vietnam, with a buzzing, haunting tone. Phrases (A0) plays recorded phrases on the keys C4-A4.

Origin: Vietnam · **Range**: F#3–G#5 (best F#3–F#5) · **Microphones**: Main, Close, Room · **Voices**: one note at a time (overlapping notes are joined) · **Program Change**: 53 · **Look-ahead**: 250 ms

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Legato**	overlap = slur · vibrato CC2	while the key is held	CC1	F#3–F#5
E0	**Scoop**	slides up from a tone below	while the key is held	CC1	whole range
F#0	**Grace above**	a tone above, then the note	while the key is held	CC1	F#3–C#5
A0	**Phrases**	one phrase per key C4–A4	one stroke	velocity	C4–A4
A#0	**Plain long**	no vibrato	while the key is held	CC1	F#3–F#5

Also on this instrument: Overlap two notes to join them; leave a gap to start a new note. CC2 sets the depth of the vibrato and CC21 its speed (on the articulations with a live vibrato). CC5 sets the time of the slides.

10. Percussion

Highstand drum (100 cm)

Highstand drum (100 cm) · 12 strokes

The largest of the four solo drums (100 cm), on a high stand: the deepest and broadest.

Origin: China · **Range**: C2–B2 · **Microphones**: Mix, Close, Overhead · **Voices**: polyphonic · **Program Change**: 75

Key	Sound	How it plays
C2	Centre	one stroke; velocity = loudness · velocity 127: double stroke
C#2	Stick	one stroke; velocity = loudness
D2	Rim	one stroke; velocity = loudness · velocity 127: double stroke
D#2	Rimshot	one stroke; velocity = loudness · velocity 127: double stroke
E2	Edge-centre	one stroke; velocity = loudness · velocity 127: double stroke
F2	Edge	one stroke; velocity = loudness · velocity 127: double stroke
F#2	Mute	one stroke; velocity = loudness · velocity 1-63: muted with the palm · 64-127: muted with the stick
G2	Slap	one stroke; velocity = loudness · velocity 127: double stroke
G#2	Scraping nails	sounds while the key is held
A2	Straight roll	sounds while the key is held · velocity 127: variable roll
A#2	Rim roll	sounds while the key is held
B2	Expressive roll	sounds while the key is held · velocity 127: roll with grace strokes

Flowerpot drum (60 cm)

Flowerpot drum (60 cm) · 12 strokes

The flowerpot drum (60 cm): tighter and more focused than the big drum.

Origin: China · **Range**: C2–B2 · **Microphones**: Mix, Close, Overhead · **Voices**: polyphonic · **Program Change**: 76

Key	Sound	How it plays
C2	Centre	one stroke; velocity = loudness · velocity 127: double stroke
C#2	Stick	one stroke; velocity = loudness
D2	Rim	one stroke; velocity = loudness · velocity 127: double stroke
D#2	Rimshot	one stroke; velocity = loudness · velocity 127: double stroke
E2	Edge-centre	one stroke; velocity = loudness · velocity 127: double stroke
F2	Edge	one stroke; velocity = loudness · velocity 127: double stroke
F#2	Mute	one stroke; velocity = loudness · velocity 1-63: muted with the palm · 64-127: muted with the stick
G2	Slap	one stroke; velocity = loudness · velocity 127: double stroke
G#2	Scraping nails	sounds while the key is held
A2	Straight roll	sounds while the key is held · velocity 127: variable roll
A#2	Rim roll	sounds while the key is held
B2	Expressive roll	sounds while the key is held · velocity 127: roll with grace strokes

Flat drum (45 cm)

Flat drum (45 cm) · 12 strokes

The flat drum (45 cm): the highest and driest of the four solo drums.

Origin: China · **Range**: C2–B2 · **Microphones**: Mix, Close, Overhead · **Voices**: polyphonic · **Program Change**: 77

Key	Sound	How it plays
C2	Centre	one stroke; velocity = loudness · velocity 127: double stroke
C#2	Stick	one stroke; velocity = loudness
D2	Rim	one stroke; velocity = loudness · velocity 127: double stroke
D#2	Rimshot	one stroke; velocity = loudness · velocity 127: double stroke
E2	Edge-centre	one stroke; velocity = loudness · velocity 127: double stroke
F2	Edge	one stroke; velocity = loudness · velocity 127: double stroke
F#2	Mute	one stroke; velocity = loudness · velocity 1-63: muted with the palm · 64-127: muted with the stick
G2	Slap	one stroke; velocity = loudness · velocity 127: double stroke
G#2	Scraping nails	sounds while the key is held
A2	Straight roll	sounds while the key is held · velocity 127: variable roll
A#2	Rim roll	sounds while the key is held
B2	Expressive roll	sounds while the key is held · velocity 127: roll with grace strokes

Paigu

Paigu (pitched barrel drums) · 12 strokes

A row of five tuned drums and a small barrel drum, each with a stroke and a roll: for melodic drum figures and fills.

Origin: China · **Range**: C3–B3 · **Microphones**: Mix, Close, Overhead · **Voices**: polyphonic · **Program Change**: 28

Key	Sound	How it plays
C3	Centre G#2	one stroke; velocity = loudness · velocity 127: double stroke
C#3	Roll G#2	sounds while the key is held
D3	Centre F#3	one stroke; velocity = loudness · velocity 127: double stroke
D#3	Roll F#3	sounds while the key is held
E3	Centre C4	one stroke; velocity = loudness · velocity 127: double stroke
F3	Roll C4	sounds while the key is held
F#3	Roll D#4	sounds while the key is held
G3	Centre D#4	one stroke; velocity = loudness · velocity 127: double stroke
G#3	Roll G4	sounds while the key is held
A3	Centre G4	one stroke; velocity = loudness · velocity 127: double stroke
A#3	Small barrel roll	sounds while the key is held
B3	Small barrel centre	one stroke; velocity = loudness · velocity 127: double stroke

Bianzhong

Bianzhong (bronze bells) · 3 strokes

The ancient set of bronze bells. Each bell gives two tones: C0 plays the centre strike, C#0 the side strike a third higher, D0 both together.

Origin: China · **Range**: D2–G7 · **Microphones**: Main · **Voices**: polyphonic · **Program Change**: 35

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Centre strike**	zhenggu tone, rings on	one stroke	velocity	D2–E7
C#0	**Side strike**	cegu tone, a third up	one stroke	velocity	F2–G7
D0	**Both tones**	both tones, side-tone key	one stroke	velocity	B3–G7

Bianqing

Bianqing (stone chimes) · 2 strokes

The ancient stone chimes: a clear, dry ring. C#0 plays a roll for as long as the key is held.

Origin: China · **Range**: C5–G7 · **Microphones**: Main · **Voices**: polyphonic · **Program Change**: 74

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Strike**	rings on	one stroke	velocity	whole range
C#0	**Roll**	held while the key is down	one stroke	velocity	whole range

Also on this instrument: The sustain pedal (CC64) holds released notes.

Dagu

Big drum (80 cm) · 12 strokes

The big drum (80 cm): the full, round heartbeat of the Chinese percussion section.

Origin: China · **Range**: C2–B2 · **Microphones**: Mix, Close, Overhead · **Voices**: polyphonic · **Program Change**: 25

Key	Sound	How it plays
C2	Centre	one stroke; velocity = loudness · velocity 127: double stroke
C#2	Stick	one stroke; velocity = loudness
D2	Rim	one stroke; velocity = loudness · velocity 127: double stroke
D#2	Rimshot	one stroke; velocity = loudness · velocity 127: double stroke
E2	Edge-centre	one stroke; velocity = loudness · velocity 127: double stroke
F2	Edge	one stroke; velocity = loudness · velocity 127: double stroke
F#2	Mute	one stroke; velocity = loudness · velocity 1-63: muted with the palm · 64-127: muted with the stick
G2	Slap	one stroke; velocity = loudness · velocity 127: double stroke
G#2	Scraping nails	sounds while the key is held
A2	Straight roll	sounds while the key is held · velocity 127: variable roll
A#2	Rim roll	sounds while the key is held
B2	Expressive roll	sounds while the key is held · velocity 127: roll with grace strokes

Highstand drum ensemble (100 cm)

Highstand drum ensemble (100 cm) · 12 strokes

The highstand drum played by a group of drummers at once, for the biggest hits.

Origin: China · **Range**: C1–B1 · **Microphones**: Mix, Close, Overhead · **Voices**: polyphonic · **Program Change**: 78

Key	Sound	How it plays
C1	Centre	one stroke; velocity = loudness · velocity 127: double stroke
C#1	Stick	one stroke; velocity = loudness
D1	Rim	one stroke; velocity = loudness · velocity 127: double stroke
D#1	Rimshot	one stroke; velocity = loudness · velocity 127: double stroke
E1	Edge-centre	one stroke; velocity = loudness · velocity 127: double stroke
F1	Edge	one stroke; velocity = loudness · velocity 127: double stroke
F#1	Mute	one stroke; velocity = loudness · velocity 1-63: muted with the palm · 64-127: muted with the stick
G1	Slap	one stroke; velocity = loudness · velocity 127: double stroke
G#1	Scraping nails	sounds while the key is held
A1	Straight roll	sounds while the key is held · velocity 127: variable roll
A#1	Rim roll	sounds while the key is held
B1	Expressive roll	sounds while the key is held · velocity 127: roll with grace strokes

Big drum ensemble (80 cm)

Big drum ensemble (80 cm) · 12 strokes

The big drum played by a group of drummers at once: weight and width for climaxes.

Origin: China · **Range**: C1–B1 · **Microphones**: Mix, Close, Overhead · **Voices**: polyphonic · **Program Change**: 79

Key	Sound	How it plays
C1	Centre	one stroke; velocity = loudness · velocity 127: double stroke
C#1	Stick	one stroke; velocity = loudness
D1	Rim	one stroke; velocity = loudness · velocity 127: double stroke
D#1	Rimshot	one stroke; velocity = loudness · velocity 127: double stroke
E1	Edge-centre	one stroke; velocity = loudness · velocity 127: double stroke
F1	Edge	one stroke; velocity = loudness · velocity 127: double stroke
F#1	Mute	one stroke; velocity = loudness · velocity 1-63: muted with the palm · 64-127: muted with the stick
G1	Slap	one stroke; velocity = loudness · velocity 127: double stroke
G#1	Scraping nails	sounds while the key is held
A1	Straight roll	sounds while the key is held · velocity 127: variable roll
A#1	Rim roll	sounds while the key is held
B1	Expressive roll	sounds while the key is held · velocity 127: roll with grace strokes

Flowerpot drum ensemble (60 cm)

Flowerpot drum ensemble (60 cm) · 12 strokes

The flowerpot drum played by a group of drummers at once.

Origin: China · **Range**: C1–B1 · **Microphones**: Mix, Close, Overhead · **Voices**: polyphonic · **Program Change**: 80

Key	Sound	How it plays
C1	Centre	one stroke; velocity = loudness · velocity 127: double stroke
C#1	Stick	one stroke; velocity = loudness
D1	Rim	one stroke; velocity = loudness · velocity 127: double stroke
D#1	Rimshot	one stroke; velocity = loudness · velocity 127: double stroke
E1	Edge-centre	one stroke; velocity = loudness · velocity 127: double stroke
F1	Edge	one stroke; velocity = loudness · velocity 127: double stroke
F#1	Mute	one stroke; velocity = loudness · velocity 1-63: muted with the palm · 64-127: muted with the stick
G1	Slap	one stroke; velocity = loudness · velocity 127: double stroke
G#1	Scraping nails	sounds while the key is held
A1	Straight roll	sounds while the key is held · velocity 127: variable roll
A#1	Rim roll	sounds while the key is held
B1	Expressive roll	sounds while the key is held · velocity 127: roll with grace strokes

Flat drum ensemble (45 cm)

Flat drum ensemble (45 cm) · 12 strokes

The flat drum played by a group of drummers at once: a tight, bright ensemble sound.

Origin: China · **Range**: C1–B1 · **Microphones**: Mix, Close, Overhead · **Voices**: polyphonic · **Program Change**: 81

Key	Sound	How it plays
C1	Centre	one stroke; velocity = loudness · velocity 127: double stroke
C#1	Stick	one stroke; velocity = loudness
D1	Rim	one stroke; velocity = loudness · velocity 127: double stroke
D#1	Rimshot	one stroke; velocity = loudness · velocity 127: double stroke
E1	Edge-centre	one stroke; velocity = loudness · velocity 127: double stroke
F1	Edge	one stroke; velocity = loudness · velocity 127: double stroke
F#1	Mute	one stroke; velocity = loudness · velocity 1-63: muted with the palm · 64-127: muted with the stick
G1	Slap	one stroke; velocity = loudness · velocity 127: double stroke
G#1	Scraping nails	sounds while the key is held
A1	Straight roll	sounds while the key is held · velocity 127: variable roll
A#1	Rim roll	sounds while the key is held
B1	Expressive roll	sounds while the key is held · velocity 127: roll with grace strokes

China gong (100 cm)

China gong (100 cm) · 6 strokes

A large flat gong (100 cm) with a wide, crashing spread.

Origin: China · **Range**: C4–F4 · **Microphones**: Mix, Close, Overhead · **Voices**: polyphonic · **Program Change**: 82

Key	Sound	How it plays
C4	Crash	one stroke; velocity = loudness
C#4	Tip	one stroke; velocity = loudness · velocity 1-63: tip at the edge · 64-127: tip at the centre
D4	Scrape	one stroke; velocity = loudness
D#4	Swirl	sounds while the key is held
E4	Roll	one stroke; velocity = loudness
F4	Choke	stops the ring

Knobbed gong (100 cm)

Knobbed gong (100 cm) · 6 strokes

A large gong with a raised knob (100 cm): a deep, round tone of definite pitch.

Origin: China · **Range**: C4–F4 · **Microphones**: Mix, Close, Overhead · **Voices**: polyphonic · **Program Change**: 83

Key	Sound	How it plays
C4	Crash	one stroke; velocity = loudness
C#4	Tip	one stroke; velocity = loudness · velocity 1-63: tip at the edge · 64-127: tip at the centre
D4	Scrape	one stroke; velocity = loudness
D#4	Swirl	sounds while the key is held
E4	Roll	one stroke; velocity = loudness
F4	Choke	stops the ring

Wind gong (60 cm)

Wind gong (60 cm) · 6 strokes

The wind gong (60 cm): thin, quick to swell, shimmering.

Origin: China · **Range**: C4–F4 · **Microphones**: Mix, Close, Overhead · **Voices**: polyphonic · **Program Change**: 84

Key	Sound	How it plays
C4	Crash	one stroke; velocity = loudness
C#4	Tip	one stroke; velocity = loudness · velocity 1-63: tip at the edge · 64-127: tip at the centre
D4	Scrape	one stroke; velocity = loudness
D#4	Swirl	sounds while the key is held
E4	Roll	one stroke; velocity = loudness
F4	Choke	stops the ring

China cymbals (50 cm)

China cymbals (50 cm) · 6 strokes

The largest pair of Chinese cymbals (50 cm).

Origin: China · **Range**: F#4–B4 · **Microphones**: Mix, Close, Overhead · **Voices**: polyphonic · **Program Change**: 85

Key	Sound	How it plays
F#4	Choke	stops the ring
G4	Open	one stroke; velocity = loudness
G#4	Mute	one stroke; velocity = loudness
A4	Edge strike	one stroke; velocity = loudness · velocity 127: swirl
A#4	Sizzle	one stroke; velocity = loudness
B4	Tip	one stroke; velocity = loudness · velocity 1-63: tip on the bow · 64-126: tip on the bell · 127: shaft of the stick

Large cymbals (40 cm)

Large cymbals (40 cm) · 6 strokes

A large pair of cymbals (40 cm), a little higher and quicker than the China cymbals.

Origin: China · **Range**: F#4–B4 · **Microphones**: Mix, Close, Overhead · **Voices**: polyphonic · **Program Change**: 86

Key	Sound	How it plays
F#4	Choke	stops the ring
G4	Open	one stroke; velocity = loudness
G#4	Mute	one stroke; velocity = loudness
A4	Edge strike	one stroke; velocity = loudness · velocity 127: swirl
A#4	Sizzle	one stroke; velocity = loudness
B4	Tip	one stroke; velocity = loudness · velocity 1-63: tip on the bow · 64-127: tip on the bell

Strawhat cymbals (32 cm)

Strawhat cymbals (32 cm) · 6 strokes

Cymbals shaped like a straw hat (32 cm): a trashy, short crash.

Origin: China · **Range**: F#4–B4 · **Microphones**: Mix, Close, Overhead · **Voices**: polyphonic · **Program Change**: 87

Key	Sound	How it plays
F#4	Choke	stops the ring
G4	Open	one stroke; velocity = loudness
G#4	Mute	one stroke; velocity = loudness
A4	Edge strike	one stroke; velocity = loudness · velocity 127: swirl
A#4	Sizzle	one stroke; velocity = loudness
B4	Tip	one stroke; velocity = loudness · velocity 1-63: tip on the bow · 64-127: tip on the bell

Water cymbals (30 cm)

Water cymbals (30 cm) · 6 strokes

The water cymbals (30 cm): thin and splashing.

Origin: China · **Range**: F#4–B4 · **Microphones**: Mix, Close, Overhead · **Voices**: polyphonic · **Program Change**: 88

Key	Sound	How it plays
F#4	Choke	stops the ring
G4	Open	one stroke; velocity = loudness
G#4	Mute	one stroke; velocity = loudness
A4	Edge strike	one stroke; velocity = loudness · velocity 127: swirl
A#4	Sizzle	one stroke; velocity = loudness
B4	Tip	one stroke; velocity = loudness · velocity 1-63: tip on the bow · 64-127: tip on the bell

Small cymbals (15 cm)

Small cymbals (15 cm) · 6 strokes

The small cymbals (15 cm): a bright, short ring for light rhythms.

Origin: China · **Range**: F#4–B4 · **Microphones**: Mix, Close, Overhead · **Voices**: polyphonic · **Program Change**: 89

Key	Sound	How it plays
F#4	Choke	stops the ring
G4	Open	one stroke; velocity = loudness
G#4	Mute	one stroke; velocity = loudness
A4	Edge strike	one stroke; velocity = loudness · velocity 127: swirl
A#4	Sizzle	one stroke; velocity = loudness · velocity 127: roll
B4	Tip	one stroke; velocity = loudness · velocity 1-63: tip on the bow · 64-127: tip on the bell

Singing bowl

Singing bowl · 6 strokes

Two singing bowls, porcelain and bronze: struck, stopped, or made to sing with the mallet on the rim.

Origin: China · **Range**: C5–F5 · **Microphones**: Mix, Close, Overhead · **Voices**: polyphonic · **Program Change**: 90

Key	Sound	How it plays
C5	Porcelain singing bowl open	one stroke; velocity = loudness
C#5	Porcelain singing bowl choke	stops the ring
D5	Porcelain singing bowl sing	one stroke; velocity = loudness
D#5	Bronze singing bowl open	one stroke; velocity = loudness
E5	Bronze singing bowl choke	stops the ring
F5	Bronze singing bowl sing	one stroke; velocity = loudness

Temple bowl

Temple bowl · 9 strokes

Three bowls, temple, bronze and porcelain: struck, stopped, or made to sing.

Origin: China · **Range**: D#5–B5 · **Microphones**: Mix, Close, Overhead · **Voices**: polyphonic · **Program Change**: 91

Key	Sound	How it plays
D#5	Temple bowl choke	stops the ring
E5	Temple bowl open	one stroke; velocity = loudness
F5	Temple bowl sing	one stroke; velocity = loudness
F#5	Bronze bowl choke	stops the ring
G5	Bronze bowl open	one stroke; velocity = loudness
G#5	Bronze bowl sing	one stroke; velocity = loudness
A5	Porcelain bowl choke	stops the ring
A#5	Porcelain bowl open	one stroke; velocity = loudness
B5	Porcelain bowl sing	one stroke; velocity = loudness

Bells

Bells · 4 strokes

Finger bells and a temple ritual chime, struck or shaken.

Origin: China · **Range**: F#5–A5 · **Microphones**: Mix, Close, Overhead · **Voices**: polyphonic · **Program Change**: 92

Key	Sound	How it plays
F#5	Finger bells shaking	one stroke; velocity = loudness
G5	Finger bells open	one stroke; velocity = loudness
G#5	Temple ritual chime shaking	one stroke; velocity = loudness
A5	Temple ritual chime open	one stroke; velocity = loudness

Shaking bells

Shaking bells · 4 strokes

A camel bell, horse bells, and a large and a small handbell.

Origin: China · **Range**: G#5–B5 · **Microphones**: Mix, Close, Overhead · **Voices**: polyphonic · **Program Change**: 93

Key	Sound	How it plays
G#5	Camel bell	sounds while the key is held
A5	Horse bells	sounds while the key is held
A#5	Large handbell	sounds while the key is held
B5	Small handbell	sounds while the key is held

Muyu

Muyu (temple blocks) · 3 strokes

Three temple blocks: low, middle and high.

Origin: China · **Range**: A5–B5 · **Microphones**: Mix, Close, Overhead · **Voices**: polyphonic · **Program Change**: 32

Key	Sound	How it plays
A5	Low muyu	one stroke; velocity = loudness · velocity 127: roll
A#5	Mid muyu	one stroke; velocity = loudness · velocity 127: roll
B5	High muyu	one stroke; velocity = loudness · velocity 127: roll

Rattle drum

Rattle drum · 1 strokes

The small rattle drum with two beads on strings.

Origin: China · **Range**: A#5 · **Microphones**: Mix, Close, Overhead · **Voices**: polyphonic · **Program Change**: 94

Key	Sound	How it plays
A#5	Shaking	sounds while the key is held

Bangzi

Bangzi (woodblocks) · 2 strokes

The claves and woodblock that mark the beat in opera.

Origin: China · **Range**: A#5–B5 · **Microphones**: Mix, Close, Overhead · **Voices**: polyphonic · **Program Change**: 95

Key	Sound	How it plays
A#5	Opera claves	one stroke; velocity = loudness
B5	Opera woodblock	one stroke; velocity = loudness

Opera percussion

Opera percussion · 12 strokes

The percussion of Chinese opera on one keyboard: drum and clapper, large and small gongs, cymbals. The three keyswitches change the drum and clapper pair: opera (C0), storytelling (C#0), bamboo clappers (D0).

Origin: China · **Range**: C6–B6 · **Microphones**: Mix, Close, Overhead · **Voices**: polyphonic · **Program Change**: 96

Keyswitch	Articulation	What it does	Sounds	Loudness	Notes
C0	**Opera drum**	Opera drum and clappers, one stroke per key	one stroke	velocity	see the key map
C#0	**Story drum**	Storytelling drum and clappers, one stroke per key	one stroke	velocity	see the key map
D0	**Bamboo**	Large and small bamboo clappers, one stroke per key	one stroke	velocity	see the key map

Key map of Opera drum (C0)

Key	Sound	How it plays
C6	Drum	one stroke; velocity = loudness · velocity 127: roll
C#6	Clapper	one stroke; velocity = loudness
D6	Large opera gong	one stroke; velocity = loudness
D#6	Large gong choke	stops the ring
E6	Small opera gong	one stroke; velocity = loudness
F6	Small gong choke	stops the ring
F#6	Opera cymbal choke	stops the ring
G6	Opera cymbal open	one stroke; velocity = loudness
G#6	Opera cymbal mute	one stroke; velocity = loudness
A6	Opera cymbal edge strike	one stroke; velocity = loudness · velocity 127: swirl
A#6	Opera cymbal sizzle	one stroke; velocity = loudness · velocity 127: roll
B6	Opera cymbal tip	one stroke; velocity = loudness · velocity 1-63: tip on the bow · 64-127: tip on the bell

Key map of Story drum (C#0)

Key	Sound	How it plays
C6	Drum	one stroke; velocity = loudness
C#6	Clapper	one stroke; velocity = loudness
D6	Large opera gong	one stroke; velocity = loudness
D#6	Large gong choke	stops the ring
E6	Small opera gong	one stroke; velocity = loudness
F6	Small gong choke	stops the ring

Key	Sound	How it plays
F#6	Opera cymbal choke	stops the ring
G6	Opera cymbal open	one stroke; velocity = loudness
G#6	Opera cymbal mute	one stroke; velocity = loudness
A6	Opera cymbal edge strike	one stroke; velocity = loudness · velocity 127: swirl
A#6	Opera cymbal sizzle	one stroke; velocity = loudness · velocity 127: roll
B6	Opera cymbal tip	one stroke; velocity = loudness · velocity 1-63: tip on the bow · 64-127: tip on the bell

Key map of Bamboo (D0)

Key	Sound	How it plays
C6	Large bamboo clappers	one stroke; velocity = loudness
C#6	Small bamboo clappers	one stroke; velocity = loudness
D6	Large opera gong	one stroke; velocity = loudness
D#6	Large gong choke	stops the ring
E6	Small opera gong	one stroke; velocity = loudness
F6	Small gong choke	stops the ring
F#6	Opera cymbal choke	stops the ring
G6	Opera cymbal open	one stroke; velocity = loudness
G#6	Opera cymbal mute	one stroke; velocity = loudness
A6	Opera cymbal edge strike	one stroke; velocity = loudness · velocity 127: swirl
A#6	Opera cymbal sizzle	one stroke; velocity = loudness · velocity 127: roll
B6	Opera cymbal tip	one stroke; velocity = loudness · velocity 1-63: tip on the bow · 64-127: tip on the bell

Dap (frame drum)

Dap (frame drum) · 5 strokes

The dap, the frame drum of the Uyghur tradition.

Origin: China · **Range**: C7–E7 · **Microphones**: Mix, Close, Overhead · **Voices**: polyphonic · **Program Change**: 97

Key	Sound	How it plays
C7	Palm mute	one stroke; velocity = loudness
C#7	Rim L	one stroke; velocity = loudness
D7	Slap	one stroke; velocity = loudness
D#7	Rim R	one stroke; velocity = loudness
E7	Finger	one stroke; velocity = loudness

Vocals and body percussion

Vocals and body percussion · 7 strokes

The shouts and body percussion of the drummers.

Origin: China · **Range**: F7–B7 · **Microphones**: Mix, Close, Overhead · **Voices**: polyphonic · **Program Change**: 98

Key	Sound	How it plays
F7	Hey	one stroke; velocity = loudness
F#7	Ha	one stroke; velocity = loudness
G7	Huh	one stroke; velocity = loudness
G#7	Stomp	one stroke; velocity = loudness
A7	Clap	one stroke; velocity = loudness
A#7	Snap	one stroke; velocity = loudness
B7	Double snap	one stroke; velocity = loudness

11. Help

What you see	What to do
The host does not list Yuefu	Let the host scan `C:\Program Files\Common Files\VST3` again. Yuefu is a 64-bit VST3 instrument.
An instrument is *not installed*	Its bank folder is not in the bank folder. Check **Bank folder** in the menu (chapter 2).
An instrument is *Locked*	Your licence does not cover it, or no licence is activated. Open **Licence...**.
This is not a valid Yuefu licence key	Part of the key is missing or changed. Paste the whole key again, or use **Open file...** with the file you received.
This licence has expired	The end date of the licence has passed. Contact AuraLink Studio for a new key.
This licence has been deactivated on this computer / has been revoked	The key no longer opens instruments here. Send us your Machine ID for a new key.
This licence is for another computer	The key was made for a different Machine ID. Send us the ID this computer shows.
Needs an online time check	A licence with an end date: connect to the internet and press **Activate**.
The computer's clock is set back	Correct the date and time of Windows, or connect to the internet and press **Activate**.
Bank not loaded	The bank is incomplete or damaged. Copy the bank folder again.
Notes cut in or crackle at their start	Choose **Preload buffer > 128 ms**, and keep the banks on an SSD.
Notes sound late when playing live	Switch the **Look-ahead** parameter off (chapter 4).
No sound from some keys	The key is outside the instrument's range: the keyboard in the window shows the playable keys.

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