



TIMEFORGE

TIMECODE GENERATOR · CONVERTER

Forge time into your Q-SYS Core. Frame-accurate SMPTE timecode on Art-Net, MTC and LTC — all at once, zero drift. Receive external TC and convert it. Plus an astronomical clock, timers and a scheduler. One plugin, the whole clockwork.

V1.0.0

Q-SYS DESIGNER 9.12+

PERPETUAL LICENSE

NO SUBSCRIPTION

▶ PLAY

■ STOP

⏸ PAUSE

↺ LOOP

09:59:52:13

ART-NET TC

Broadcast · 2.0.0.255 : 6454

SENDING

MTC · RTP-MIDI

192.168.1.40 : 5004 — session "TimeForge"

CONNECTED

LTC AUDIO

SMPTE LTC Encoder — 25 EBU

RUNNING

INTERNAL BUS

BV Factory inter-plugin sync

25 FPS

What is TimeForge?

TimeForge generates **SMPTE timecode** inside your Q-SYS Core and sends it everywhere at once: **Art-Net TC** for lighting desks and media servers, **MTC over the network** for DAWs and sequencers — no MIDI cable — **LTC audio** through a Q-SYS encoder, and an **internal bus** for other BV Factory plugins. Flip one selector and it **receives** timecode instead (Art-Net or LTC) and re-sends it on the other protocols — an instant TC converter.

SETUP — ONCE, IN DESIGNER

1

Drop it in

Drag TimeForge from the plugin list into your design.

2

Size & license

In Properties, set how many **Cue Points**, **Timers** and **Scheduler** slots you need — and paste your **License Key**.

3

Pick the rate

On the Timecode page, choose your **FPS** — **25 EBU** for most of Europe, **30 / 29.97 DF** for NTSC land.

4

Enable & push

Switch on the outputs you need (**Art-Net / MTC / LTC / Internal**) and push to the Core.

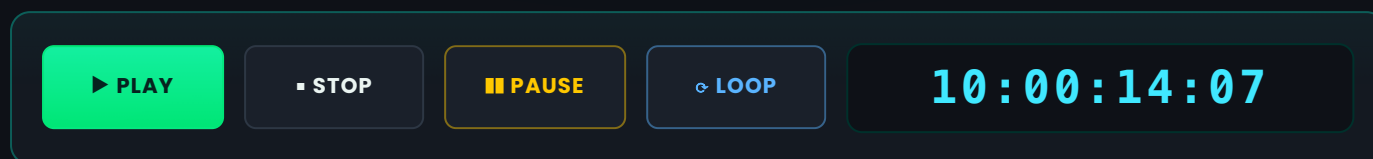
THE FOUR OUTPUTS — ALL SIMULTANEOUS

OUTPUT	TYPICAL USE	TO SET UP
ART-NET TC	Lighting consoles (GrandMA, ChamSys...), media servers	Broadcast , or Unicast with a comma-separated IP list. UDP port 6454 .
MTC	DAW / sequencer over the network (RTP-MIDI)	Target IP + port (5004). On a Mac it appears in Audio MIDI Setup → Network ; on Windows use rtpMIDI.
LTC AUDIO	Analog SMPTE feed for recorders, cameras, legacy gear	Add a SMPTE LTC Encoder component to the design, select it in the LTC section, wire its audio output.
INTERNAL BUS	Other BV Factory plugins	Just enable it — H/M/S/F, frame-count and elapsed pins.

Zero drift, by design. TimeForge never counts ticks — every update is recomputed from a microsecond monotonic clock, so the timecode cannot drift, even after hours.

Frame rates: 23.976 · 24 · 25 · 29.97 DF · 30 go out on every protocol. The exotic rates (**50 · 59.94 · 60 · 100 · 120 · 240 · 1000** fps) live on the **internal bus only**.

Transport, Timeline & Cue Points



THE TRANSPORT

CONTROL	WHAT IT DOES
▶ PLAY	Starts generating timecode from the Offset (or resumes from a pause).
▬ PAUSE	Freezes the timecode where it is. PLAY resumes from that exact frame.
■ STOP	Stops and returns to the start Offset .
↺ LOOP	Loops between Loop In and Loop Out (HH:MM:SS:FF), seamlessly.
OFFSET	The timecode where playback starts — e.g. 09:58:00:00 for a two-minute preroll.
TIMELINE	Seek fader across the loop range — scrub to any position, even while playing.

Remote control: every control is also a **pin** — start the show from a UCI button, a GPI, a schedule or any script, exactly as if you pressed PLAY.

CUE POINTS — TRIGGERS ON THE TIMELINE

Each cue is a **timecode position**, a **name**, an **enable** switch and a **trigger pin**. When the running timecode passes the cue, the pin fires a clean **0.5 s pulse** — wire it to snapshots, video starts, GPOs, anything.

FIELD	MEANING
TC	Fire position, HH:MM:SS:FF .
NAME	Your label — shows up in the fire history.
ENABLE	Arms the cue. Disabled cues are ignored.
HISTORY	The last 30 fires, time-stamped — your show log.

Cues fire once per pass. After firing, a cue re-arms only when the timecode goes back before it (loop, seek or restart) — no accidental double-fires.

Receiving Timecode — TC Source In

Set **SOURCE** to **Art-Net In** or **LTC In** and TimeForge becomes a slave: it locks to the incoming timecode and **re-sends it on every enabled output**. LTC in → Art-Net + MTC out, in one component.

HOW IT PLAYS OUT

1 · SELECT	2 · LOCK	3 · RE-SEND	4 · COAST
Source = Art-Net In or LTC In	Status shows "Locked" + detected rate	All enabled outputs follow the received TC	Signal lost? It keeps running from the last position

THE TWO SOURCES

ART-NET IN

Point the sender at this Core (or broadcast), port **6454**. The frame rate is **auto-detected** from the incoming packets. The Art-Net **output** is automatically disabled — no feedback loop, ever.

LTC IN

Add an **LTC decoder** component to your design, feed it the incoming SMPTE audio, then select it in **LTC IN COMPONENT**. The status field confirms the connection and lock.

GOOD TO KNOW — SLAVE MODE RULES

PLAY becomes the output gate. In slave mode the transport doesn't drive the position anymore — the source does. PLAY on = re-send everything · PLAY off = outputs muted, the display still follows the incoming TC.

No signal? Freeze and coast. TimeForge keeps extrapolating smoothly from the last received frame and shows **No Signal** until the source returns.

Cue points still work — they fire on the received position exactly as they do on generated timecode. Loop and Offset are internal-mode features and are ignored.

Back to Internal: the transport stops and holds the last received position. Press PLAY to generate from there, or STOP to return to your Offset.

Clock, Timers & Scheduler

Three more pages in the plugin — three independent machines, always running, license included.

CLOCK — REAL TIME + THE SUN

Enter your **latitude / longitude / UTC offset / DST mode** once. You get the full date and time on pins, plus computed **sunrise, sunset, dawn, dusk, solar noon and day length** — NOAA-grade solar math. **Five events can fire a trigger**, each with its own **±120 min** offset:

EVENT	EXAMPLE
Sunrise / Sunset	"Sunset -30 min → <i>façade lighting ON</i> " — every day, automatically, all year.
Civil Dawn / Dusk	Street-light style switching, a touch earlier/later than sunrise/sunset.
Solar Noon	The sun's true peak — for time-lapse or shading systems.

TIMERS — THREE MODES EACH

COUNTDOWN

Set **MM:SS**, press **START** — fires the trigger at zero. **Auto-Reset** restarts it by itself: an instant metronome for anything.

COUNTUP

A stopwatch, with an optional target and interval pulses. **LAP** records split times into a lap list.

RECURRING

Fires every **X** seconds/minutes, forever. **FIRES AT** always shows the wall-clock time of the next shot.

SCHEDULER — CALENDAR TRIGGERS

MODE	FIRES
DAILY	Every day at HH:MM .
WEEKLY	At HH:MM , on the days you tick (Mon–Sun).
DATE	Once, on DD/MM/YYYY at HH:MM — the premiere, the fireworks.

Once a day, guaranteed. Each slot fires at most once per day — restarts and red deploys can't double-trigger your show. **NEXT** shows the soonest upcoming event.

Backup & License

BACKUP — THE CONFIG PAGE

EXPORT saves every setting — outputs, cues, clock, timers, scheduler — to a single file on the Core (`media/TimeForge.tfconfig`). **IMPORT** restores it in one press. Perfect for cloning a rig or keeping a known-good show file.

Day to day you don't need it: Q-SYS already **remembers all settings across redeloys and reboots** — the backup is your belt *and* braces.

LICENSE

EVAL MODE

Designer emulation: everything works, free, no key needed. Design and rehearse at will.

NO LICENSE

Physical Core: copy the **Core ID** shown on the Config page, get your key (`TFGE-XXXX-XXXX-XXXX`) from BV Factory, and paste it in the plugin **Properties** → **License Key**. Without it, PLAY is refused. Keys are locked to one Core. Perpetual, no subscription.

THE PINS THAT MATTER

PIN	DIRECTION	USE
Play / Pause / Stop / Loop	In + Out	Full remote transport — UCI, GPI, schedules.
PlayTrig	In	Pulse = start. The safe one-shot way to launch from scripts.
TCDisplay / FrameCount	Out	Live timecode text and absolute frame number.
Int H / M / S / F / Frames	Out	Internal TC bus — numeric feeds for other plugins and logic.
Cue n Trigger	Out	0.5 s pulse when the timecode passes cue <i>n</i> .
ClkTrg... / Tmr n Trigger / Sch n Trigger	Out	Sun events, timer fires, scheduled fires.
TCSOURCESelect	In + Out	Switch Internal / Art-Net In / LTC In from outside.

Quick Recipes

Set it once — then it's one press (or no press at all).

I WANT...	SETUP
Sync my lighting desk to Q-SYS	Enable ART-NET (Broadcast, or Unicast + console IP), FPS 25 EBU , press PLAY .
Timecode into my DAW, no cables	Enable MTC , target = the computer's IP. Accept the session in Audio MIDI Setup (Mac) or rtpMIDI (Windows).
Convert incoming LTC to Art-Net + MTC	SOURCE = LTC In , select your LTC decoder, enable ART-NET + MTC, PLAY on. Done — you're a converter.
Show TC starting at 10:00:00:00	OFFSET 10:00:00:00 — press PLAY at showtime (or fire PlayTrig from the scheduler).
A 5-minute pre-show loop	LOOP IN / LOOP OUT set, LOOP on, PLAY . Cues inside the loop re-fire every pass.
Façade lights at dusk, off at dawn	Clock page: enable Civil Dusk and Civil Dawn triggers, wire their pins. Offsets to taste.
A chime every day at 19:30	Scheduler slot: Daily, 19:30 , wire the trigger pin to your audio player.

TROUBLESHOOTING

PROBLEM	FIX
PLAY does nothing	On a physical Core, check the Config page: NO LICENSE = paste your key in Properties → License Key .
Console gets no Art-Net TC	Same network/VLAN? Try Unicast with the console's IP. Check the NIC selector and that TX PKTS is counting up.
DAW doesn't see MTC	The RTP-MIDI session must be accepted on the computer (Audio MIDI Setup / rtpMIDI). MTC STATUS should read Connected.
No LTC audio	The design needs a SMPTE LTC Encoder component, selected in LTC COMPONENT , with its audio output wired.
Art-Net In says No Signal	The sender must target this Core's IP or broadcast, port 6454 , same VLAN — and check the NIC selector.
A cue never fires	Is its ENABLE on? Does the timecode actually cross its position? A fired cue re-arms only once TC passes back before it.
Sun times look wrong	Check latitude/longitude signs (west = negative longitude), the UTC offset and the DST mode.

Need a key, another Forge, or a Bridge?

bvfactory.dev

BRIDGE CONNECTS · FORGE CREATES · MIND ORCHESTRATES