



STEP-BY-STEP TUTORIAL

Q5K

The digital video effects desk, explained from A to E

Complete user guide to Q5K, a software recreation of the Quantel DPE 5000: from first steps to MIDI control, from the frozen frame store to the wipe fade-over, from AUTOSEQUENCE to the final export.



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THE ORIGINAL MACHINE

In the late 1970s, the Quantel DPE 5000 was the first fully digital real-time video effects system. Its frame stores froze and manipulated every source independently; its “Stick Box” console with T-bars and joysticks shaped the look of 1980s television graphics. This software takes up its logic, its names (DIGIFLIP, AUTOFLEX, OOZE, AUTOSEQUENCE) and its “look”. Throughout the guide, the  box points out what comes from the period machine.

On-screen labels

The interface itself is in French; this guide uses English wording. Main labels as they appear on screen:

On screen	In this guide	On screen	In this guide
Source... · Actif · ❄ Gel · Priorité	Source... · Active · ❄ Freeze · Priority	Mémoriser → A / B · T-bar actif · Transition → B · Durée	Store → A / B · T-bar active · Transition → B · Duration
Fondu vidéo · Volet · Stores · Iris · Reprendre la main	Video mix · Wipe · Blinds · Iris · Take back control	▶ Dérouler · ■ Stop · Aller	▶ Run · ■ Stop · Go
Sauver... · Charger... · Exporter...	Save... · Load... · Export...	• REC sortie · J Muet	• REC output · J Mute

Launching the software

Double-click **Q5K.app**. The window opens as two resizable panes (drag the central divider): on the left the **video output** with the transport bar, on the right the **console** — a scrolling column of coloured blocks.

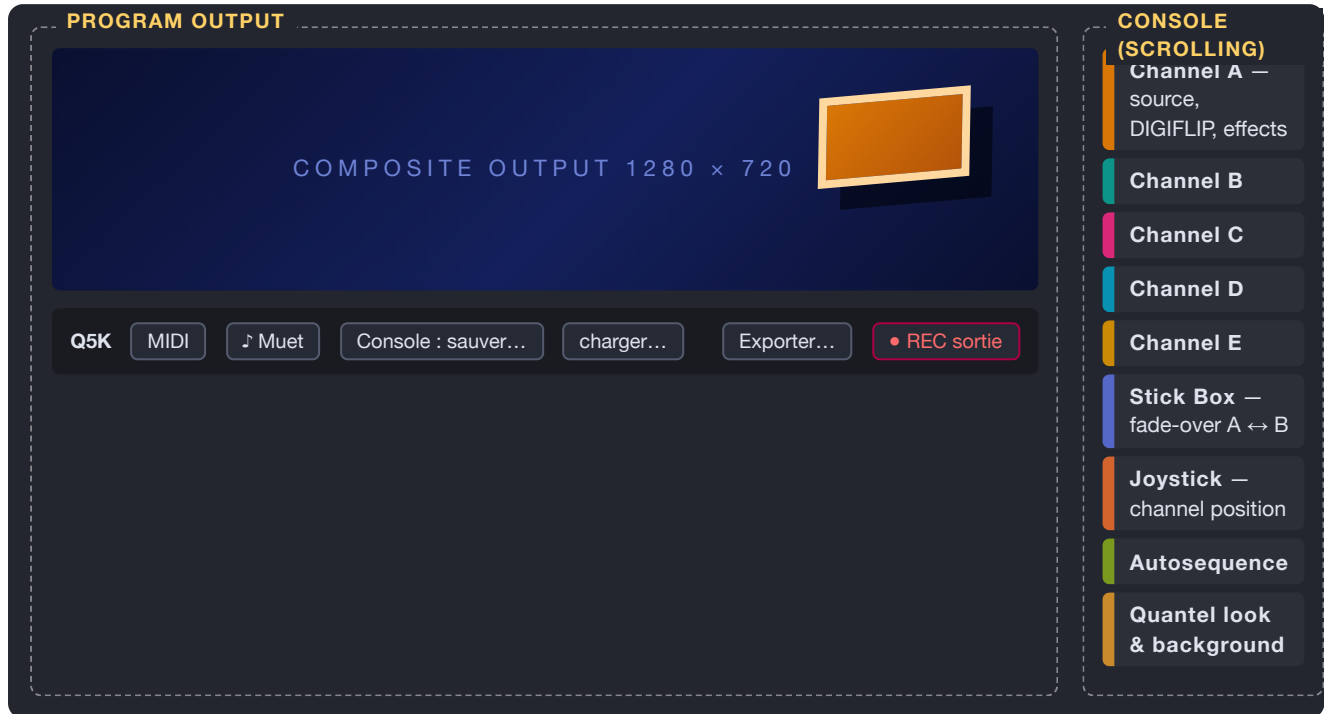


Fig. 1 — The zones of the window: output + transport on the left, console on the right. Each console block has its own colour, echoed by its sliders.

The five channels

Q5K composites up to **five simultaneous sources**, named **A**, **B**, **C**, **D** and **E**. Every channel has the full kit: 3D transformation, border, shapes, keys, effects. The output stacks them by **priority** (chapter 2).

Slider conventions — essential to know

Gesture	Effect
Drag the slider	Sets the value continuously.
Double-click the slider	Back to the <i>neutral value</i> (0 for a position or an angle, 1 for a size or a gain...).
Click the number on the right	Opens keyboard entry: type the value (comma or point accepted), Enter confirms, Esc cancels.



TIP

Double-click is the fastest way to undo an experiment: double-click Flip, Tumble and Spin and the picture is flat again.

Loading a video into a channel

- 1 In the **Channel A** block, click **Source...** and choose a video file (.mp4, .mov...). Playback starts at once, *looping*: when the source ends, it starts again from the beginning.
- 2 The file name appears in the block title, and the channel automatically switches to **Active**.
- 3 Repeat with channels B, C... as many as needed. A channel without a source stays black and does not appear in the composite.

The three channel-head controls

Control	Role
Active	Inserts or removes the channel from the composite, without touching its settings.
* Freeze	Freezes the frame store: the displayed picture stays on the last captured frame while playback continues behind the scenes. Unfreeze to return to live.
Priority 1–5	Stacking order: 1 = background , 5 = foreground . Two channels with the same priority stack in A→E order.



FRAME STORE

On the real DPE 5000, each channel was a *frame store*: a digital picture memory that could be frozen at any moment — revolutionary in 1978. The * Freeze button is exactly that.

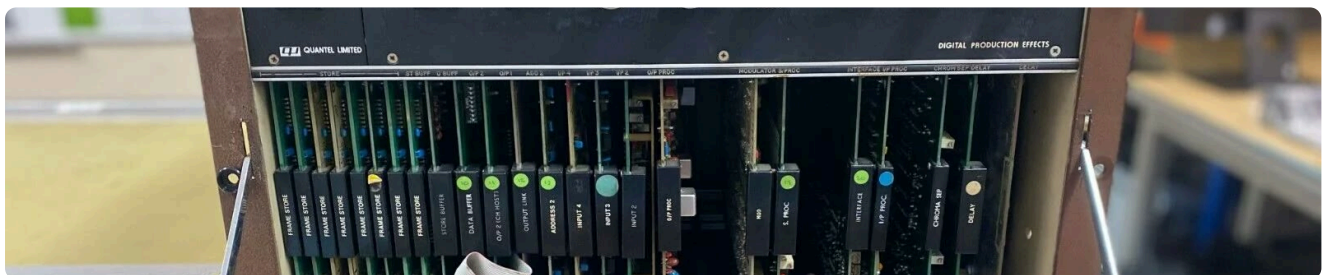


Fig. — Inside the DPE 5001P Plus chassis: seven “FRAME STORE” cards side by side, each one a complete picture memory.

Choosing the channel that provides the sound (♪)

- 1 In the transport bar, open the ♪ menu (it shows “Mute” by default).
- 2 Choose **Channel A** (or another): this channel is monitored on the speakers, the others are silenced.
- 3 This same channel will provide the sound for • **REC** and **Export** (chapter 11). “Mute” = no audio track.

Exercise — two stacked sources

- 1 Load a video into channel A and another into channel B.
- 2 Set A's priority to **1** and B's to **3**: B moves in front of A.
- 3 On channel B, lower **Size X** and **Size Y** to about 0.4: B becomes an inset laid over A — your first *picture-in-picture*.
- 4 Turn on * **Freeze** on B: the inset freezes while the background keeps moving.

The heart of the DPE: every channel moves, shrinks and rotates in **true 3D perspective**. Six sliders are all it takes:

Slider	Range	What it does
Position X	-1 ... +1	Horizontal translation (0 = centre). -1/+1 = screen edges.
Position Y	-1 ... +1	Vertical translation (0 = centre).
Size X (squeeze / expand)	0.05 ... 2	Width. 1 = native size; <1 compresses (“squeeze”), >1 expands.
Size Y (anamorphic)	0.05 ... 2	Height, independent of the width — hence anamorphic distortions.
Flip (Y axis, °)	-180 ... 180	Rotation around the vertical axis: the picture turns like a door.
Tumble (X axis, °)	-180 ... 180	Rotation around the horizontal axis: the picture tips like a blind.
Spin (Z axis, °)	-180 ... 180	Flat rotation, in the plane of the screen.



DIGIFLIP

Flip, tumble and spin are the three rotations of the original *DIGIFLIP* software — the title sequence that “turns over” the picture in mid-flight was its doing. At $\pm 90^\circ$ of flip or tumble, the picture is seen edge-on and disappears: that is the moment when period graphics “swapped” two pictures.

Exercise — the flying inset

- 1 Start again from the chapter 2 exercise (A full screen, B as an inset at priority 3).
- 2 On B: **Position X** = 0.45 and **Position Y** = 0.4 — the inset moves to the top-right corner.
- 3 **Flip** = 25° : the inset takes a perspective angle, 1982 TV-studio style.
- 4 Animate by hand: slowly drag **Flip** from -180 to +180 and watch the picture turn right over. Double-click to return flat.
- 5 Try **Spin** = 180: the picture is upside down, like a playing card turned over.



AUTHENTIC PERSPECTIVE

Rotations use a true 3D projection (homography): near edges grow, far edges recede — not a mere squash. This is what gives the characteristic “flight” of DPE pictures.

To drive the position by gesture rather than slider, use the **joystick** (chapter 7). To animate a move automatically, store two states and use the **Stick Box** (chapter 6) or the **AUTOSEQUENCE** (chapter 8).

The border

- 1 Raise **Border (width)**: a frame is drawn around the picture. It follows the perspective — it is part of the video stream, as on the original machine.
- 2 Click the **Border colour** swatch to choose the hue (off-white and royal blue are the classics of the genre).

AUTOFLEX shapes and OOZE

Every channel can be cut out by a mask: **Rectangle**, **Oval**, **Diamond** or **Banner**.

- 1 Choose **Shape A (Autoflex)** — for instance Oval: the picture becomes a medallion.
- 2 Choose a different **Shape B** — for instance Diamond.
- 3 Drag **OOZE (shape A → B)**: the mask *flows* continuously from one shape to the other. At 0.5 you are halfway between the two.
- 4 **Mask softness** softens the edge of the cut-out (0 = hard, 1 = very soft).



OOZE

“Ooze” is the name Quantel gave to this shape interpolation in AUTOFLEX. The word stuck in the jargon of effects operators.

The drop shadow

- 1 Raise **Drop shadow**: an offset shadow appears behind the channel, lifting it off the background.
- 2 **Shadow distance** sets the offset (double-click = 0.35, the typical value).

Crop — reframing the source

The four sliders **Crop left / right / top / bottom** (0 to 0.45) trim the picture *before* the transformation: the border hugs the new framing. Ideal for cutting out a burnt-in logo or tightening on a face before turning the picture into an inset.



Recipe — the guest medallion

Channel B: source loaded · priority 5 · Size X/Y = 0.38 · Position X = -0.5, Y = 0.35 · Shape A = Oval · Softness = 0.08 · Border = 0.04, cream colour · Shadow = 0.5. The medallion portrait of variety shows, ready in a minute.

Effect	Slider(s)	Description
Opacity	0 ... 1	Overall transparency of the channel (1 = opaque).
Mosaic	0 ... 1	Pixelation into large squares — the “anonymity” effect of period news bulletins.
Strobe	0 ... 15 fps	The frame store refreshes only N times per second: deliberate stutter. 0 = off.
Glint	0 ... 1	Diagonal light sweep, the “brushed metal” sparkle of title sequences.
Wrap	0 ... 1	Wrapping: the picture repeats while curling back on itself.
Page turn	0 ... 1	The page turns: the corner of the picture rolls into a cylinder and lifts.
Video wall	1 ... 6	(In the fold-out panel) repeats the picture in an N×N grid — the wall of screens.

Chroma key — keying on a colour

- 1 Choose the colour to remove with the swatch to the right of **Chroma key (strength)** (green by default).
- 2 Raise **Chroma key (strength)** towards 1: the colour becomes transparent, the channel below shows through.
- 3 Adjust **Key tolerance**: higher = wider range of hues removed. Double-click = 0.35.

Luma key and proc-amp (“Proc-amp · Luma key · Video wall” panel)

Open the fold-out panel at the bottom of the channel:

- **Luminance gain / Chroma gain / Hue**: the period *proc-amp* — corrects exposure, saturation and hue of the source (double-click = neutral).
- **Luma key (strength) + Threshold**: makes dark areas transparent (or bright ones with **Invert luma key**) — perfect for cutting out a white title on a black background.

Recipe — the keyed title

Channel E: video of a white title on black · priority 5 · panel open: Luma key = 1, Threshold = 0.25 → the black disappears, the letters float over the picture. Add Glint = 0.6 for the sparkle sweeping across the title.

Recipe — the multiplied screen

Channel A full screen: Video wall = 3 → nine copies of the picture. Add Mosaic = 0.15 and a strobe at 8 fps: instant new-wave clip.

The Stick Box stores **two complete arrangements** of the console (the settings of the 5 channels) and goes from one to the other with the **T-bar** — the transition lever of video control rooms.

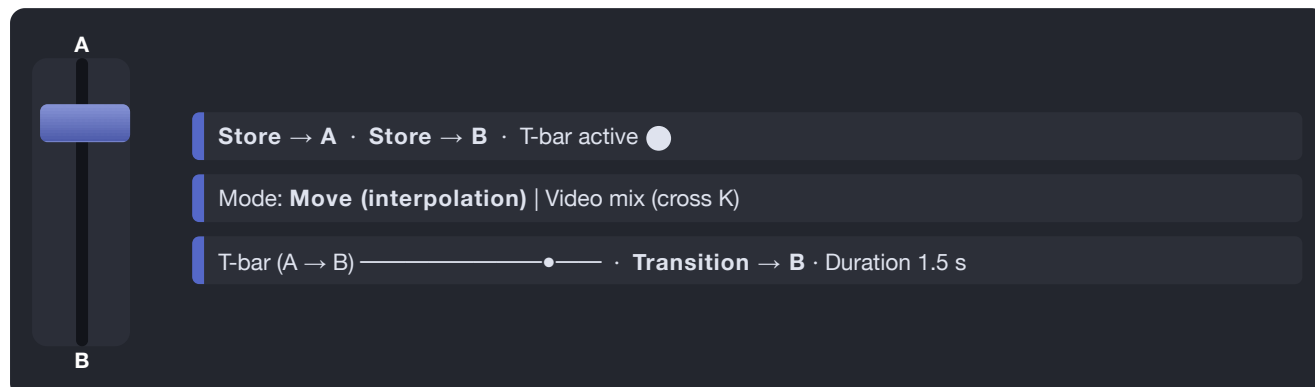


Fig. 2 — The Stick Box: the lever is pulled with the mouse, from A (top) to B (bottom).

Step by step — your first transition

- 1 Set the console to a first state — for instance channel B full screen.
- 2 Click **Store → A**.
- 3 Change the settings — B as an inset in a corner, flip at 25°.
- 4 Click **Store → B**.
- 5 Turn on **T-bar active** (the lever and the slider light up).
- 6 Pull the **T-bar** from top to bottom: the console *flies* continuously from state A to state B. Every intermediate position is computed in perspective.
- 7 Or click **Transition → B**: the lever animates on its own along a smooth curve, over the chosen **Duration** (0.2 to 6 s).

Move or Video mix?

Mode	Behaviour
Move (interpolation)	The parameters themselves interpolate: the pictures <i>move</i> from one state to the other. The classic DVE move.
Video mix (cross K)	The two arrangements are composited separately then mixed pixel by pixel. Choose the Wipe pattern : Dissolve, H wipe, V wipe, Blinds, Iris.



IMPORTANT — “MY SLIDERS NO LONGER RESPOND!”

While **T-bar active** is lit, the output follows memories A/B: the channel settings have *no effect* (only Active and * Freeze stay live). An **orange banner** at the top of the console reminds you. Click “**Take back control**”: the state shown on screen becomes the real state of the channels and the T-bar switches off — without a frame jump.

7 The position joystick

The **Joystick — channel position** block replaces the two Position X/Y sliders with a pad in the manner of the original Stick Box joystick.

- 1 Choose the channel to drive with the **A B C D E** segments at the top of the block. (It is the same “selected channel” as the MIDI bank, chapter 10.)
- 2 Drag the orange dot in the pad: the channel follows your gesture live. The centre of the pad = the centre of the screen.
- 3 To recentre precisely: double-click the channel's **Position X** and **Position Y** sliders.



GESTURE + REC

The joystick comes into its own during a **• REC** (chapter 11): start recording and “play” the position live — the movement is captured as is, like a performance.

8 AUTOSEQUENCE — programming a sequence

The AUTOSEQUENCE automatically chains a list of stored arrangements, each with its transition duration — the “mini-floppy” of the DPE 5000.

Building a sequence

- 1 Set the console to the desired starting state.
- 2 Click + **Add current arrangement**: “Event 1” appears.
- 3 Change the console (positions, sizes, effects...), then add “Event 2”. Repeat as many times as needed.
- 4 Set the **Duration (s)** of each event: it is the transition time *towards* that state (smooth curve, then a half-second hold).
- 5 Click ► **Run**: the sequence plays in a loop from event to event. ■ **Stop** interrupts it.

Managing the sequence

- **Go** (on a line): transitions immediately to that event, without running the rest.
- **X**: deletes the event.
- **Save... / Load...**: the sequence is saved as JSON in `~/Library/Application Support/DPE5000/Sequences/` — your “mini-floppies”.



SEQUENCE → VIDEO FILE

A sequence can be rendered offline, cleanly, frame by frame: that is the “Autosequence” mode of **Export** (chapter 11).

The **Quantel look & background** block acts on the whole composite output — it is what gives the period “texture”.

Slider	Effect
Softness (period softness)	Slight overall blur: 1980 digital video was never clinical.
Chroma resolution (Y/C)	Subsamples colour relative to luminance — a tribute to the DPE's 2-bit Y/C coding. Below 0.5, colours “bleed” over edges, very authentic.
Quantisation	Reduces the number of levels: flat areas and steps in gradients.
Trails (output trails)	Re-injects the previous frame: every movement leaves a ghost trail.
Trail persistence	Length of the trail (0.7 = short, 0.99 = almost infinite).
Background	Colour of the composite background, visible wherever no channel covers.

Recipe — the “1981 graphics” look

Softness = 0.4 · Chroma resolution = 0.45 · Quantisation = 0.2 · Deep midnight-blue background. Add a bordered inset at 25° flip with a shadow: you are there.

Recipe — the psychedelic trail

Trails = 0.8 · Persistence = 0.96 · then animate a spin with the slider or the joystick: the picture leaves spiralling echoes. Cut the trails (double-click) to clean the screen.



TRAILS AND LEGIBILITY

High trails build up fast: if the screen becomes unreadable, double-click **Trails** (back to 0) — the output clears in a second.

10 Driving it from a MIDI controller

Any USB-MIDI controller (nanoKONTROL, Launch Control, APC...) can drive the console. Plug it in: detection is automatic (a green dot appears on the **MIDI** button of the transport).

The console philosophy

Rather than a mapping per channel (5 × 15 knobs!), Q5K takes up the logic of a real desk:

- a **channel selector** knob picks A–E;
- a **bank of knobs** drives *the selected channel*: position X/Y, sizes, flip/tumble/spin, opacity, border, OOZE, mosaic, shadow, glint, wrap, page turn;
- a dedicated fader holds the **T-bar**;
- buttons trigger the **actions**: Store → A, Store → B, T-bar active on/off, Automatic transition, Freeze selected channel, REC output.

Assigning a control (Learn)

- 1 Click **MIDI** in the transport to open the configuration window.
- 2 On the row of the desired parameter, click **Learn** — the button reads “Move the control...”.
- 3 Turn the knob (or press the button) on your controller: the assignment shows in green (e.g. `CC 12 ch1`) and is saved at once.
- 4 **X** removes an assignment; **Clear all** starts from scratch. Mappings persist from one session to the next.

Pickup mode

On by default, **pickup mode** avoids jumps: after a channel change, a knob only “takes” the value when it crosses the parameter's current position. Without pickup, the value jumps at the first movement.



TYPICAL SETUP (9 KNOBS + 6 BUTTONS)

Knob 1 = channel selector · knobs 2–3 = position X/Y · 4–5 = sizes · 6 = flip · 7 = opacity · 8 = OOZE · fader = T-bar · buttons = Store A, Store B, T-bar on/off, Transition, Freeze, REC. Enough to improvise a complete graphics package without touching the mouse.

11 Recording and exporting

• REC — capturing a live performance

- 1 First choose the sound channel in the  menu if you want sound in the file.
- 2 Click • **REC output** and choose the file location (Movies folder by default).
- 3 Play: T-bar, joystick, MIDI controller, freezes, effects — everything you do is captured in real time, picture *and sound* (the transport message confirms “picture + sound of the  channel”).
- 4 Click ■ **Stop**: the .mov file (H.264 + AAC, 1280×720) is finalised.

No duration limit — only disk space counts (≈ 56 MB/minute).

Export... — the clean, offline render

- 1 Click **Export...** in the transport.
- 2 In the panel, choose the content:
 - **Current state**: the displayed arrangement, for the entered duration (free field, no limit — the slider goes up to 10 min);
 - **Autosequence**: the complete sequence of chapter 8, with its exact transitions.
- 3 Choose the **frame rate** (25 or 30 fps) and confirm.
- 4 Progress is shown in the transport; **Cancel** interrupts cleanly. The sound of the  channel is copied from the source file.

REC or Export?

	• REC	Export...
Capture	Live, gestures included	Frame-by-frame recomputation
Regularity	Depends on real time	Perfect, deterministic
Content	What you play, as long as you play	Current state for N s, or the sequence
Typical use	Performance, improvisation, VJ	Final render, programmed title sequence

12 Saving the whole console

- 1 **Console: save...** (transport) writes the complete state as JSON: the 5 channels, the look, the trails, memories A/B, the sequence, *and the paths of the sources*.
- 2 **load...** restores everything: the sources are reopened automatically (if the files still exist), then the settings applied. The T-bar comes back switched off, ready to re-arm.

Consoles are stored by default in `~/Library/Application Support/DPE5000/Consoles/`.

A Appendices

Neutral values (double-click)

Parameter	Neutral	Parameter	Neutral
Position X / Y, Flip, Tumble, Spin	0	Opacity, Size X / Y	1
Border, OOZE, Mosaic, Shadow, effects	0	Proc-amp gains	1
Shadow distance	0.35	Key tolerance	0.35
Luma key threshold	0.25	Chroma resolution	1
Trail persistence	0.9	Video wall	1

Files on disk

Content	Location
Complete consoles	<code>~/Library/Application Support/DPE5000/Consoles/</code>
AUTOSEQUENCE sequences	<code>~/Library/Application Support/DPE5000/Sequences/</code>
MIDI mappings	<code>~/Library/Application Support/DPE5000/midi-mappings.json</code>

Troubleshooting

Symptom	Likely cause / solution
The sliders no longer change the picture	T-bar active: the output follows memories A/B. Click “Take back control” in the orange banner (ch. 6).
A channel stays black	No source loaded, channel not Active , or Opacity at 0.
No sound in the REC / export	The 🎵 menu is on “Mute”: choose a channel <i>before</i> starting.
The picture is frozen on a channel	❄ Freeze is on, or a very low Strobe is set.
The screen fills with trails	Double-click Trails to return to 0.
The MIDI controller does not respond	Check the green dot on the MIDI button; in pickup mode, cross the current value first (ch. 10).
“Transition → B” is greyed out	Store A <i>and</i> B first, then turn on the T-bar.