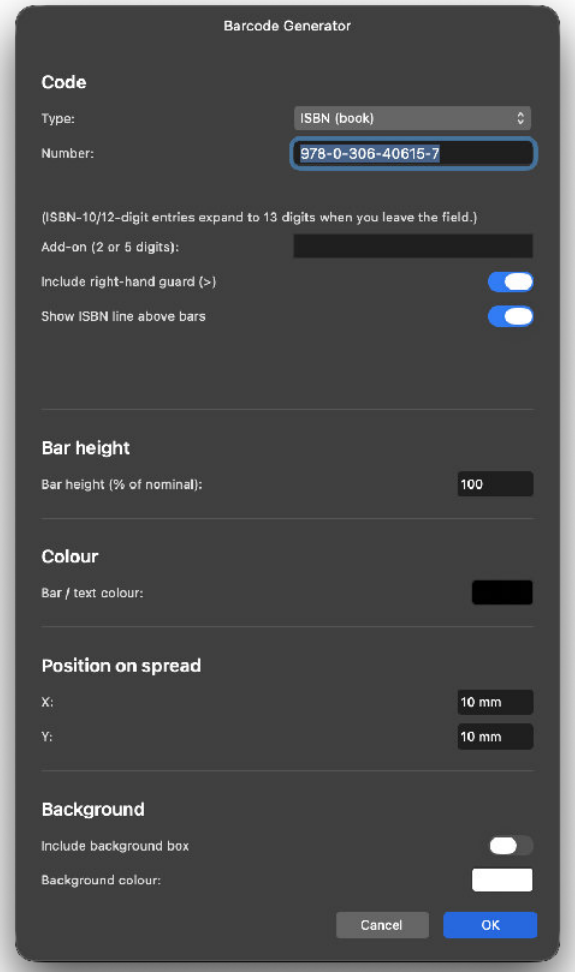
barcode-generator

Print-production barcode studio for Affinity: EAN-13/ISBN/ISSN/UPC-A/EAN-8 plus EAN-2/EAN-5 price add-ons, rendered as font-independent vector curves with live on-canvas preview.





Installation

1. Download the zip file and unzip it.
2. Run the script in one of two ways: **a) Run directly** — Open the Script Editor panel (**Window > Scripting > Script Editor**), paste the contents of `barcode-generator.js` into the editor, and press **Run**. **b) Save to Script Library first** — Follow step (a) above, then click **Save As...** to save the script to the Script Library. Open the Script Library panel (**Window > Scripting > Script Library**) and click the saved script once to run it.

Purpose

Generates retail and periodical barcodes natively inside Affinity as a single named grouped vector node. Glyph outlines (human-readable digits above and below the bars, plus the closing `>` marker) are extracted directly from BWIPP-generated SVG references and reproduced exactly using PolyCurveNodes — no font dependency, so output prints identically on any machine. A single worker shared by preview and commit means what you see while editing is what gets placed.

Not in scope: Code 128, QR codes, and other non-retail symbologies; ISMN (removed in v1.0.1 — see Known limitations for the re-add path).

Supported formats

Type	Accepted input	Check digit	Top label	Sample (auto-filled)
ISBN (book)	10 digits (incl. trailing X), 12 digits, or 13 digits; must resolve to 978/979	Computed for 10/12-digit input; verified for 13-digit	`ISBN …` (toggleable, on by default)	`978-0-306-40615-7`
EAN-13	12 or 13 digits	Computed / verified	None	`5012345678900`
EAN-8	7 or 8 digits	Computed / verified	None	`12345670`
UPC-A	11 or 12 digits	Computed / verified	None	`012345000058`
ISSN (periodical)	7 digits + check char (digit or X), or 7-digit root	Embedded as EAN-13 (`977` + root + `00` + EAN check)	`ISSN …` (always on)	`1234-5679`
Add-on (any main type except bare EAN-8 note below)	2 or 5 digits	EAN-2 mod-4 / EAN-5 mod-10 parity selected automatically	Digits above the add-on bars	`12`, `12345`

Hyphens and spaces in input are ignored for validation. An ISBN-10 is converted to ISBN-13 (`978` + first 9 digits + recomputed check) after its own mod-11 validation passes.

Dialog walkthrough

Code group

- **Type** — Combo box. Changing it live-fills **Number** with that type's check-digit-valid sample from the table above, so pressing OK immediately renders a working barcode. Smart-preserve: the fill only replaces an empty box or the previous type's sample — your own typed input is never clobbered by a combo mis-click.
- **Number** — Text box. Typing or pasting a complete valid ISBN-10 (or 12-digit 978/979 prefix) in ISBN mode expands it to 13 digits in the box. Deleting a single character off a finished 13-digit number never triggers expansion, so mid-correction edits stay editable.

- **Hint line** — `(ISBN-10/12-digit entries expand to 13 digits when you leave the field.)` Static reminder of the expansion above.
- **Add-on (2 or 5 digits)** — Optional price/issue supplement drawn to the right of the main block. A half-typed add-on costs only the add-on in preview (main symbol stays rendered); OK still enforces a complete 2-or-5-digit entry.
- **Include right-hand guard (>)** — Toggles the quiet-zone `>` mark. Default ON. Supported on all types (EAN-8 and UPC-A gained it in v1.1.9). With an add-on present the mark jumps past the add-on block; see Output anatomy.
- **Show ISBN line above bars** — Toggles the eye-legible `ISBN …` top line. Default ON; auto-disabled for non-ISBN types. ISO 2108 says the human-readable ISBN "should" (not "shall") appear above the symbol, so omitting it is legitimate; the HRI digits below always carry the full number. ISSN keeps its top line always (stricter guidance, and the only true-ISSN human rendering).
- **Status line** — Live validation feedback (□ … messages mirroring the OK-time alerts). Blank means the current input validates (or is still being typed — only complete-looking input is flagged).

Bar height (% of nominal, 25–200)

GS1 truncation model: bar *widths* always stay at nominal print size; only bar *height* scales, truncated from the TOP with bottoms anchored (descender into the HRI area preserved). HRI digits, top labels, and text sizes stay nominal at any setting. Note GS1 itself discourages truncation for scanning — this control exists for layout-constrained design work.

Colour

Bar/text colour picker (default black). Recolouring repaints live — at the latest when the picker closes: colour pickers emit no dialog events on current builds, so nothing updates mid-drag, but the close tick rebuilds with the new colour. The commit is always correct. See `docs/sdk-issues.md` BUG-018.

Position on spread

X/Y in millimetres (default 10, 10), either direction unbounded. Moves repaint live; the committed group can also be dragged afterwards.

Background

- **Include background box** — Default OFF. When ticked, a filled box is drawn behind everything, hugging the visible content: its top follows bar truncation (label/add-on/guard aware), its bottom stays anchored at the HRI area.
- **Background colour** — Default white. Breathing room is 2pt on left/bottom, 4pt on top (label headroom) and right (guard clearance).
- Heads-up: a *white* box on a white page is invisible by definition — if toggling seems to do nothing, set a colour first to verify.

Live preview

The barcode renders live on the spread while the dialog is open — move or resize the dialog to see the canvas behind it. Typing a valid number, toggling the guard or background, and changing height or position all repaint immediately. Colours repaint live as well, at the latest when their picker closes (no mid-drag updates — no dialog events exist for pickers). Invalid input clears the preview (the status line explains why); closing with Cancel leaves zero residue. Preview nodes sit ungrouped on the spread until OK commits the named grouped container and selects it. Commit is two undo steps (container, then content), as in all previous releases.

Output anatomy

- **Named container** — `ISBN: <formatted>`, `EAN-13: <digits>`, `EAN-8: <digits>`, `UPC-A: <digits>`, or `ISSN: <label>`, each with `+<addon>` suffixed when an add-on is present. Selected on commit.
- **Bars** — Shape rectangles at GS1-nominal module widths (~38 mm wide ISBN at 100%), guard bars descender into the HRI line per the `guarddescent` convention.
- **HRI digits below** — Full digit string under the bars (system digit outside the quiet zone for EAN-13; first/last digits outboard for UPC-A), always present — this is the mandatory machine-readable human backup.
- **Top label** — `ISBN …` (optional) or `ISSN …` (always) above the bars at 10-unit pitch; short labels center over the bar block, wide labels keep the legacy left anchor.
- **Quiet-zone guard (>)** — Marks the protected right quiet zone. Nominal position with no add-on (HRI baseline); jumps past the add-on block when present and rises to share the price digits' baseline (one text line), per BWIPP's `guardrightypos` rule retranscribed for our digit metrics.
- **Add-on block** — 2-digit (20 modules) or 5-digit (47 modules) price supplement, digits in the HRI sans face over their bar columns on the GS1 9-module pitch, bottoms flush with the main guard-bar bottoms (GS1 §5.2.3.6), tops/heights tracking the % setting with bottoms pinned.

ISBN hyphenation & network

Proper hyphenation (`978-0-306-40615-7`, not naive splits) uses the live ISBN ranges data from `https://isbnbarcode.org/api/isbn-ranges.json` (mirrored from the International ISBN Agency), fetched at most once per script run: 15 s timeout at render, 5 s capped attempt for live preview. Offline, blocked, or out-of-coverage input falls back silently to a 3-1-5-3-1 split. Your own hyphenation is never overridden: a hyphenated ISBN-13 in the Number box is preserved verbatim on the top label. Requires Affinity's scripting network access; without it everything works, hyphenation just falls back.

Troubleshooting

Symptom	Cause	Fix
`Please enter a number.`	Empty Number box	Enter or pick a type sample
`ISBN-13 check digit is incorrect. Expected N.`	Last digit wrong	Correct it (the expected digit is given)
`ISBN-10 check digit is incorrect.` / `last char must be 0-9 or X`	Bad ISBN-10	Verify against the title page
`ISBN must be 10, 12 …, or 13 digits.` / `must start with 978 or 979.`	Wrong length/prefix	Count digits; ISBN-13 is 978/979 only
`EAN-13 / EAN-8 / UPC-A check digit is incorrect.`	Bad check digit	Use the expected digit shown
`ISSN root must be 7 digits.`	Non-digit root or wrong length	Enter 7 digits + check char
`Add-on must be 2 or 5 digits (or blank).` / `…only digits.`	Partial/non-numeric add-on	Complete or clear the field; preview shows the main symbol meanwhile
□ … status line, preview cleared	Input incomplete/invalid (see above)	Read the line; keep typing or correct
Toggling background shows nothing	White box on white page	Set a background colour to verify
Colour change not previewing	Picker emits no dialog events	Close the picker, or press OK — commit is correct
`Could not create barcode: expected FillDescriptorHandle`	Pre-1.0.1 build	Re-paste the current script (fixed in 1.0.1)

FAQ

- **Which type for books / magazines / US retail?** Books □ ISBN (with a 5-digit price add-on for US covers); periodicals □ ISSN (usually with a 2-digit issue add-on); general merchandise □ EAN-13; North America legacy □ UPC-A.
- **Why is there no ISMN?** The slab top font has no `M` glyph and the renderer was a stub. To re-add it: extract the M outline from a BWIPP ISMN sample SVG exactly the way I and S were extracted, add a menu entry, and mirror the ISSN embedding with a

979-0 prefix (see the code note left at the removal site).

- **Why no Code 128 / QR?** Out of scope — this script is the retail/periodical (EAN-family) studio. Use a dedicated tool for those.
- **Why does EAN-8 accept an add-on?** Convenience extension in this script; two-digit add-ons with EAN-8 are not defined by any symbology standard (per BWIPP), so verify acceptance with your printer/retailer.

Known limitations

The GLYPHS table contains hardcoded SVG path data for digits 0–9 and guard characters, so no system font is required.

Two-digit add-ons with EAN-8 are not defined by any symbology standard (per BWIPP); this script renders them anyway on request.

Colour pickers emit no dialog value-change events on current builds (see `docs/sdk-issues.md` BUG-018): colours apply at picker-close tick or OK commit, never mid-drag.

Changelog

1.1.19 - Code-quality pass: non-digit input (e.g. a stray letter) in the "no check digit supplied" ISBN/EAN-13/EAN-8/UPC-A fields now fails with a clear message instead of corrupting the checksum and crashing later; ISSN input now validates its own check character instead of silently discarding it; the script's top-level run is wrapped in try/catch with console logging for field debugging; dialog defaults consolidated into a CONFIG block; duplicate add-on validation logic merged into one function. No user-facing behaviour changes for valid input.

1.1.18 - Add-on digit x mirrors BWIPP's measured placement (glyph origins 3 modules left of pattern starts; advance-centers ≈ pattern starts): slot-centering (v1.1.8) and ink-centering (v1.1.17) both sat right of the reference, ink-centering additionally jittering with mirror parity.

1.1.17 - Add-on digits center over bar ink derived from the encoded runs (same parity as the renderer), absorbing slot-map drift and pattern ink asymmetry; agreement with bars by construction.

1.1.16 - Add-on digits use the HRI sans shapes (BWIPP renders add-on text in the HRI face), centered over their columns with an exact shared baseline (per-glyph y absorbs the small height variance); '>' shares it. Background covers the taller digits, including truncated. Top labels stay slab; 9-module pitch unchanged (spec).

1.1.15 - Lenient preview for half-typed add-ons: an invalid add-on now costs only the add-on (main symbol stays rendered, status line explains) instead of clearing the whole preview. OK-time validation unchanged.

1.1.14 - Optional ISBN top line: new switch (default ON, auto-disabled for non-ISBN types) omits the eye-legible 'ISBN ...' above the bars; ISO 2108 says it "should", not

"shall", appear. ISSN keeps its top line always (stricter guidance, only true-ISSN rendering). Null label flows through existing skip paths, background, and preview key untouched.

1.1.13 - Add-on tracks % height: bottoms stay pinned (GS1 §5.2.3.6) while heights scale exactly like main bars; digits and '>' ride as one rigid unit. (v1.1.12 froze the block — correct rule, wrong heights.)

1.1.12 - GS1 §5.2.3.6 bottom alignment: add-on bar bottoms sit flush with main guard-bar bottoms (fixed 86-unit height, static block — truncation moves main bars only); digits and '>' ride the new tops at the same gap. Tops-aligned layout retired.

1.1.11 - Guard-after-addon shares the price digits' baseline (one text line) instead of BWIPP's 6pt-below-bars rule, whose Helvetica metrics don't match our higher slab caps; co-moves rigidly with digits/bars at any % (all derive from barTop). No-add-on baseline unchanged.

1.1.10 - Guard-after-addon rises near the bar tops (BWIPP guardrightypos: glyph baseline 6pt below bar tops; HRI baseline without add-on) in all three renderers; background covers the raised mark. No-add-on placement unchanged per the reference.

1.1.9 - Guard clears the add-on: '>' sits after the add-on block when present (288.65/342.65 family/UPC-A, past-EAN-8-add-on), else nominal; backgrounds recomputed to cover it in all six guarded cases. Guard support added to EAN-8 (151.65) and UPC-A (230, clearing the outboard check digit) behind the existing switch. Add-on pitch kept at spec 9-module slots (BWIPP-identical).

1.1.8 - Add-on digit placement fixed: overlay assumed a 3-module start guard, but '112' spans 4 — every digit sat a full module left of its bars; centers now computed as 4+9k+3.5. Add-on errors surface on the live status line for all types (the silent whole-barcode preview clear now explains itself). EAN-8 renders add-ons (previously silently dropped) with widened background and suffixed group name.

1.1.7 - Centered short top labels: labels narrower than the bar block (e.g. ISSN) center over the bars via a shared drawTopLabel helper; wider labels keep the legacy left anchor, so ISBN output is unchanged.

1.1.6 - Roomier background box: 2pt breathing room left/bottom, 4pt top (top-label headroom) and right (guard-area clearance), converted to SVG units internally.

1.1.5 - Background box tracks % height: box top follows bar truncation (top label / add-on aware), bottom stays anchored at the HRI area — no more full-size slab behind short bars. All three renderers.

1.1.4 - Colour-aware preview key: picker colours are read for real (wrapper components, else native getRGBA8 via lazy require, else constant fallback), so a picker-close tick rebuilds with the new colour instead of skipping on an unchanged key.

1.1.3 - Preview commands use createCommand(false): the no-arg default appears to auto-select new nodes, which voids preview painting while modal (commit selects the

container manually afterwards, as in 21-make-grid). Probe logging removed. Bar/background colours apply at OK — colour pickers emit no dialog events in either spelling, so live recolouring is impossible on current builds.

1.1.2-probe - Temporary instrumented build: every dialog trigger logs its

1.1.1 - Preview trigger coverage: the shared evaluation now runs from every control (per-control attachments — the dialog-wide tick is event-driven and never fires for switch/picker interactions) plus hyphenated preview labels via a bounded once-per-session pre-warm. Also fixes v1.1.0 wiring the colour handlers before the pickers existed (silently never attached).

1.1.0 - Live on-canvas preview via a single worker shared by preview and commit (per-type auto-schema, expansion, validation, and rendering can no longer diverge); change-key gate rebuilds only on effective input change; invalid input clears the preview; Cancel leaves nothing; OK commits the named container and selects it.

1.0.7 - Clipped-text fix: status and hint lines go full-width (caption slot is creation-fixed — native API has getLabel but no setLabel — so no room is spent on a caption), dialog widened 360 400, longest live message tightened.

1.0.6 - Error prefix + VS16 (red cross mark; SDK 3.3 exposes no dialog text-colour API — verified against the official reference — so a red glyph is the closest achievable red).

1.0.5 - Repeat-paste fix: tick evaluates statelessly every poll (the "last seen" change cache could desynchronize after programmatic writes, swallowing repeat pastes); errors now prefixed (no text-colour API exists for dialog controls); auto-expand explanation moved to a static bracket line under Number (the two-line label did not render as two lines), label back to single-line.

1.0.4 - Single-dialog live feedback via polling tick: complete valid ISBN-10/12 input is expanded (hyphenated when live ranges data is available, plain digits otherwise) once the box loses focus; check-digit errors show inline on a status line. Mid-correction guard keeps single-char deletions of a finished 13 editable. Reverts the 1.0.3 double-OK reshow flow; ranges fetch takes an optional timeout (5s for the live tick, 15s at render).

1.0.3 - Normalize-and-reshow: OK on an ISBN-10/12-digit entry reopens the dialog showing the expanded hyphenated ISBN-13 plus a status note; second OK renders. (In-dialog live rewrite can't repaint the focused box and the SDK has no blur event, so conversion surfaces at OK instead of tab-out.)

1.0.2 - Live ISBN expansion: a complete valid ISBN-10 (or 12-digit 978/979 prefix) typed or pasted in ISBN mode is immediately rewritten to 13 digits in the box; Number label notes the auto-expansion.

1.0.1 - Per-type auto-schema: changing Type live-fills the Number box with that type's check-digit-valid sample (smart-preserve keeps user-typed input); ISBN sample replaced with valid 978-0-306-40615-7 (old sample contained literal xx-x and could never validate); fixed swapped lineFill/lineStyle args in addGlyphAt (expected

FillDescriptorHandle on 3.3); removed ISMN menu entry (sample failed validation, renderer was a stub alert — see code note for re-adding).

1.0.0 - Initial version