Ink and paste cartridges: Design Verification Report

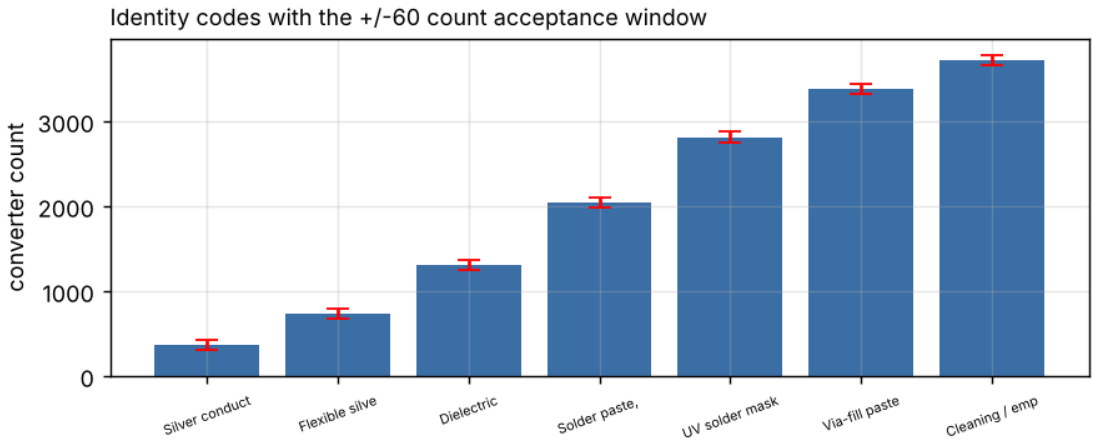
CRT-3 | Blaide product line | 17 November 2026 | Design only: nothing built or tested

What has been checked without hardware, by calculation, simulation or software test.

Results

- Firmware identifies all seven codes across 1 % resistor tolerance; closest codes are 346 ADC counts apart
- A reading between two codes, an open tag and a shorted tag are all reported as unknown, never guessed

Cartridge	Resistor	Expected count	Accepted window	Gap to next code
Silver conductor	1,000 ohm	372	312 to 432	366
Flexible silver	2,200 ohm	738	678 to 798	571
Dielectric	4,700 ohm	1309	1249 to 1369	739
Solder paste, low T	10,000 ohm	2048	1988 to 2108	767
UV solder mask	22,000 ohm	2815	2755 to 2875	562
Via-fill paste	47,000 ohm	3377	3317 to 3437	346
Cleaning / empty	100,000 ohm	3723	3663 to 3783	end



Firmware tests covering this product pass as part of the suite of 113 checks: every code identified across 1 % resistor tolerance; open, shorted and in-between readings reported as unknown.

Not verified

Everything in the test plan (document 04) needs hardware.