

ADAM Power Supply Load Tester

Coleco internal lab fixture — P/N AP-83-C-076 REV 0 — hardware identification and operational analysis

Evidence tags: **CONFIRMED** direct physical evidence · **INFERRED** reasoned · **OPEN** needs more investigation · **DESIGN** published Coleco spec

1. Provenance & Source

The board documented here is in the possession of Richard DiRocco, who acquired it from Philip Kosowsky in June 2026. Mr. Kosowsky is a former Coleco Test Laboratory employee — the same source from which the preserved ADAM System Final Test Module (Unit #15) was acquired — and retained this board, together with other internal Coleco tooling, after the Coleco closure of 1988. The board subsequently saw continued service use through Kosowsky's Adam Supplies, an ADAM repair operation that ceased trading in 1996, and remained in his custody from then until the 2026 sale.

The board is a **CONFIRMED** internal Coleco production: not a commercial product, not sold through any channel, and produced in low volume for use by Coleco's own electrical test laboratory and field repair technicians. An unknown but small quantity were likely distributed to the repair technicians who serviced ADAM units that failed final test. The board's path through two former Coleco Test Lab insiders (Kosowsky as original retainer, DiRocco as analyst) provides a chain of provenance consistent with its origin as internal lab tooling.

PROVENANCE CHAIN

Coleco Industries, Inc. (1983, electrical test lab) → Philip Kosowsky (retained after the 1988 Coleco closure; continued use at Kosowsky's Adam Supplies until its 1996 closure; held in custody thereafter) → Richard DiRocco (acquired by purchase, June 2026).

2. Device Identification

Attribute	Value	Evidence
Common name	ADAM Power Supply Load Tester / ADAM PSU Load Board	CONFIRMED
Manufacturer	Coleco Industries, Inc. (internal)	CONFIRMED
Coleco part number	AP-83-C-076 REV 0	CONFIRMED
Year of production	1983 (year code embedded in P/N; corroborated by Dale "8340" date code — week 40 of 1983)	CONFIRMED

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Attribute	Value	Evidence
Input/test connector	DE-9 (DB-9) male, 9-pin D-subminiature, board-edge mounted — mates directly with the ADAM's standard printer-to-console power harness	CONFIRMED
Top-side marking	COLECO logo (upper right of board, faded silkscreen)	CONFIRMED
Bottom-side marking	COLECO logo (upper left); foil P/N sticker (upper right)	CONFIRMED
Distribution channel	Coleco internal tooling — never sold commercially	CONFIRMED
Rarity	Believed extant in single-digit numbers; this example may be unique among surviving examples	INFERRED



Figure 1 — Foil P/N sticker on the solder side. The label reads (rotated 90° from the photo): AP 83 C 076 REV 0. The "AP" prefix is a Coleco internal category code; "83" is the year, "C" the variant code, "076" the sequence, and "0" the initial revision.



Figure 2 — Component (top) side, overhead view. Seven resistors and a single DE-9 male connector are populated on a single-sided FR4 board. The faded COLECO logo is visible at upper right.



Figure 3 — Solder (bottom) side, overhead view. Single-sided FR4 construction with hand-laid copper pour. COLECO logo at upper left; foil P/N sticker at upper right (visible rotated). The edge-connector fingers at the bottom of the board fan out into hand-laid traces.

3. Function

The board is a **resistive dummy load** for the ADAM power supply. It is a service-bench fixture designed to be connected in place of the ADAM console at the output of the printer-housed switching supply, presenting a known resistive load to each of the supply's four DC rails so that rail voltages can be measured under load rather than at no-load.

The rationale is that a power supply may produce nominal voltages under no-load conditions yet sag, oscillate, or fold back when an actual load is connected. Measuring the rails with the ADAM console attached requires opening the unit and probing live; measuring them with this load board attached takes seconds and isolates the supply from any downstream fault. A supply that holds all four rails within their tolerance windows under the loads presented by this board is judged fit for return to the field; a supply that sags or drops out is rejected.

DESIGN INTENT

Verify all four ADAM PSU rails (+5 V, -5 V, +12 V Inductive, +12 V Logic) remain within their published tolerance windows under representative resistive load. Used as a go / no-go fixture during PSU repair and final QA.

4. Physical Description & Interface

The board is a single-sided FR4 PCB approximately 3 × 2.5 inches, with all components mounted on the top side and a hand-laid copper pour on the bottom side serving as the conductor network. Construction is consistent with low-volume in-house fabrication: copper traces are thick and irregular, solder joints are hand-built with substantial fillets, and the through-hole pattern was clearly drilled to suit oversized leaded components rather than a fine-pitch device population.

A single **DE-9 (DB-9) male connector** is mounted on one edge of the board. This is not a generic test-bench interface: it is the **same DB-9 connector used by the ADAM console itself** as its power input. The ADAM's standard printer-to-console power harness terminates in a DB-9 female that normally mates with a DB-9 male on the back of the console. To use this load board, the technician unplugs that harness from the ADAM console and plugs it directly into J1 on the load board. **No adapter cable, no modification, no special harness is required.**



Figure 4 — DE-9 (DB-9) male connector at the board edge, face-on. Nine pins arranged in the standard 5-over-4 D-subminiature pattern. This is the same connector type and pinout as the ADAM console's power input.

4.1 DB-9 Pinout

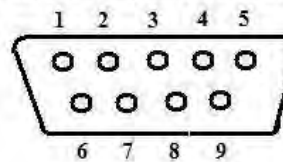
The ADAM power harness pinout, as documented in the community-published ADAM service reference, is:

Pin	Wire colour	Function	Source
1	Brown	+12 VDC (one of the two +12 V rails — see §6)	CONFIRMED
2	Red	+12 VDC (the other +12 V rail)	CONFIRMED
3	Orange	+5 VDC	CONFIRMED
4	Yellow	−5 VDC	CONFIRMED
5	—	Ground	CONFIRMED
6–9	—	Unconnected on the ADAM harness	INFERRED

Power for the ADAM

PIN	Color	Volts
# 1	brown	+12vdc
# 2	red	+12vdc
# 3	orange	+5 vdc
#4	yellow	-5 vdc
# 5	ground	

ADAM power connector
onboard the ADAM console



IMPORTANT! check the input power from your ADAM power supply to make sure what voltages you have on the inside surface of the ADAM power in connector.

Figure 5 — ADAM DB-9 power connector pinout (community-published reference). The diagram shows the connector as viewed looking into the male connector on the back of the ADAM console; this load board's J1 is wired to the same scheme so that the same harness mates with it.

Note on the two +12 V rails: The ADAM PSU produces two distinct +12 V outputs — "+12 V Inductive" (powering the printer's motors and solenoids) and "+12 V Logic" (powering logic loads such as the VDP analog section and serial drivers). The community pinout diagram lists both as "+12 VDC" without distinguishing them. Cross-referencing Coleco's *Printer Logic Board Repair Guide* (Doc #323-169.0, June 1985) establishes that the host computer receives both rails through this connector. Which physical pin (1 or 2) carries which logical rail is currently **OPEN**; see §10.

5. Component Inventory

Two resistor values are now fully confirmed by close-up photographs of the body markings. Three remaining resistor values are **OPEN** pending in-circuit measurement or further photography.

Ref	Component	Value (marked)	Function / notes	Evidence
R1	Dale RS-10 axial wirewound, dark cement case, ~1.5"	4 Ω, 1 %, 10 W (RS-10 4Ω 1% 10W 7038)	Read directly from the body silkscreen. Sized to load the +5 V rail (Pin 3) at ~1.25 A ($P = V^2/R = 6.25$ W, ~62 % of the 10 W rating). Position: rightmost large resistor on the board.	CONFIRMED
R2	Dale RS-10 axial wirewound, dark cement case, ~1.5"	Value not yet read	"8340" Dale date code visible (year 1983, week 40). Position: leftmost of the three large resistors. Sized to load one of the two +12 V rails (Pin 1 or Pin 2).	CONFIRMED / OPEN
R3	Dale RS-10 axial wirewound, dark cement case, ~1.5"	Value not yet read	Position: middle of the three large resistors. Sized to load the other +12 V rail (Pin 2 or Pin 1), providing independent load on each of the two +12 V outputs.	CONFIRMED / OPEN
R4	Brown ceramic-cased axial resistor, ~1.0", smaller package than R1–R3	Value not yet read	Mounted offset from the row of large resistors. Smaller package implies lower wattage rating. Could be a precision divider for a test-point tap, an additional load element on the +5 V rail, or a bleeder.	CONFIRMED / OPEN
R5	Dale axial wirewound, small package (~0.6"), horizontal mount	40.2 Ω, 1 % (40.2Ω 1% 8024)	Read directly from the body silkscreen. The small package limits wattage to ~1–2 W, constraining its assignment to a low-voltage / low-current rail. On –5 V (Pin 4), dissipates 0.62 W at 125 mA — a sensible token load. Position: far-left edge of the board.	CONFIRMED
R6, R7	Two Dale RS-family axial wirewound resistors, mounted vertically	Values not yet read	Small package (~0.4–0.5"), low wattage. Position: far-right edge of the board. Plausibly small bleeders, test-point tap dividers, or auxiliary low-current loads.	CONFIRMED / OPEN
J1	DE-9 (DB-9) male D-subminiature connector, board-edge mounted	—	Direct mate with the ADAM printer-to-console power harness (DB-9 female end). Pin assignments per §4.1.	CONFIRMED



Figure 6 — R1 close-up showing the body silkscreen 4Ω 1% 10W 7038. The "7038" is a Dale internal lot/part-code suffix.



Figure 7 — Dale logo and "RS-10" series designation visible on the same body. Confirms the manufacturer and series for the large cement-cased units; the RS-10 series is rated at 10 W.



Figure 8 — R5 close-up showing 40.2 Ω 1 % (top resistor in frame). The lower resistor shows the "8340" date code referenced for R2 (Dale week 40, 1983)



Figure 9 — Close-up of the two small vertically-mounted wirewound resistors at the right edge of the board (R6, R7). Dale brand markings and "RS" family identifiers are visible but the specific Ω values are not yet legible.

6. ADAM Power Supply Context

The ADAM does not house its own power supply in the console: the printer chassis contains the mains transformer, rectifiers, and regulators, and the regulated DC rails are conducted via the DB-9 harness from the printer to the console.

Per Coleco's *Printer Logic Board Repair Guide* (Doc #323-169.0, June 1985), the printer power supply (Coleco Assembly P/N 41240; schematic 41234) derives four regulated low-level DC voltages plus one 18 V unregulated voltage. The 18 V unregulated rail is used internally to the printer for the ribbon-advance solenoid circuitry and does not leave the printer chassis. The four regulated rails — which appear on the DB-9 to the host computer — are:

Rail	DB-9 Pin	Coleco tolerance	Range (V)	Primary loads (host computer)
+5 V	3	+6 / -3 % DESIGN	4.85 to 5.30	Z80A CPU, master 6801 (AdamNet), all TTL/CMOS logic
+12 V Ind.	1 or 2	+5 / -5 % DESIGN	11.4 to 12.6	Inductive loads — printer motors and solenoids (drawn into printer chassis itself)
+12 V Logic	2 or 1	+5 / -5 % DESIGN	11.4 to 12.6	VDP analog section, RS-232 mark level, miscellaneous +12 V logic loads on host
-5 V	4	-7 / +5 % DESIGN	-4.75 to -5.35	DRAM substrate bias (V _{bb})

Two architectural points are worth noting:

1. The ADAM PSU has **two physically distinct +12 V rails**, not a single +12 V tapped twice. They are routed separately because the inductive rail must tolerate brief sags and current spikes from motor/solenoid commutation without disturbing the logic rail. Loading them through separate load resistors lets each be verified independently.
2. **The ADAM PSU does not produce a -12 V rail.** Some earlier ADAM documentation in the community has incorrectly listed -12 V as the fourth rail; the official Coleco repair guide is unambiguous on this point.

The two confirmed resistor values on the load board map cleanly onto two of these four rails:

Component	Confirmed value	Most likely rail (pin)	Resulting load	Dissipation vs. rating
R1	4 Ω, 10 W	+5 V (Pin 3)	I = 1.25 A	P = 6.25 W (62 % of 10 W) — sensible margin
R5	40.2 Ω, ~1–2 W package	-5 V (Pin 4)	I ≈ 125 mA	P = 0.62 W — safe on a 1 W resistor; a token load consistent with the -5 V rail's light operational current
R2, R3 (unread)	—	+12 V Ind. and +12 V Logic (Pins 1 & 2)	—	Two large RS-10 cement-cased resistors providing independent

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Component	Confirmed value	Most likely rail (pin)	Resulting load	Dissipation vs. rating
				loads on the two +12 V rails

The pin-to-rail mapping inside the board is **INFERRED** from each resistor's physical value and the published ADAM pinout; tracing the bottom-side copper from each DB-9 pin to its corresponding resistor would confirm it directly (see §10).

7. Operating Procedure

1. With the printer powered off, unplug the printer-to-console power harness from the back of the ADAM console.
2. Plug that same harness (DB-9 female) directly onto J1 of the load board.
3. Power on the printer.
4. With a DVM, measure each of the four rails at the test points marked on the board. Hand-written annotations on the board (e.g. the "-5V" label visible at the right of the connector) identify the rail at each test point.
5. Compare each measurement against the tolerance window in §6. A supply that holds all four rails within tolerance under the resistive load presented by this board has passed a meaningful go / no-go test.
6. Power off promptly. Do not leave the board connected longer than necessary to take the readings — see §8.

WHY THIS MATTERS

A supply tested only at no-load can read nominal on all four rails and still fail the moment the console is reconnected. Symptoms of an under-load failure include cold-boot freezes, intermittent AdamNet errors, video instability, and tape-drive misreads — all of which can be misattributed to other subsystems. The load board lets the technician rule the supply in or out in under a minute, using only the harness already in hand.

8. Thermal & Safety Considerations

With multiple high-wattage resistors actively dissipating their loads on a small unventilated PCB, the board accumulates heat rapidly. Philip Kosowsky's operational warning, as given in his original seller description at the time of the 2026 sale, is reproduced here:

THERMAL SAFETY WARNING

When plugged in, measure the voltages quickly and disconnect promptly — the board heats up rapidly and the resistor bodies will burn fingers within seconds of touching them.

Quantitatively: R1 alone dissipates 6.25 W on the +5 V rail under load. The two +12 V load resistors will together dissipate a further 6–10 W (the exact figure depends on their unread values), and the -5 V load contributes another ~0.6 W. Total board dissipation is therefore on the order of **12–17 watts into a roughly two-square-inch active component area**. With no heatsinking and no forced air, the cement bodies will reach surface temperatures well above 100 °C within tens of seconds of continuous operation. This is normal and expected behaviour



for the design — the board is intended for short-duration measurement, not extended bench operation.

Practical recommendation: power on, take the readings, power off. Allow several minutes of cool-down before handling.

9. Historical Significance & Rarity

This board occupies a small but distinct niche in the ADAM hardware ecosystem. Three factors combine to make it historically significant:

1. Coleco internal tooling. Unlike the commercial ADAM peripherals that have been documented extensively, Coleco's internal service and manufacturing tools were never offered to the public and have largely been lost as the original test labs and service centres were dismantled. Each surviving example is a window into how Coleco actually tested and serviced the ADAM in 1983–1984. This load board is notably absent from the test-fixture lists in Coleco's *Printer Logic Board Repair Guide* (which catalogues only the formal Final Test fixtures T-1638, T-1132, etc.), consistent with its status as an informal repair-bench tool rather than a factory-test apparatus.

2. Direct provenance from a Coleco insider. The board's path from the original Coleco electrical test lab through Philip Kosowsky (former Coleco Test Lab employee, retained the board after the 1988 Coleco closure) to Richard DiRocco (operator of ColecoVisionADAM.com and AdamArchive.org, acquired the board in June 2026) preserves an unbroken chain from the original Coleco lab context into the current archival record. This is the same Kosowsky source from which the preserved ADAM System Final Test Module (Unit #15) entered the collector record.

3. Operational primitive. The board is the simplest possible expression of an idea — a handful of resistors and a connector — but it encodes the exact engineering judgement that decided whether an ADAM supply was good enough to ship. The chosen values ($4\ \Omega$ on +5 V, $40.2\ \Omega$ on –5 V) directly encode Coleco's view of each rail's working current. The architectural decision to load the two +12 V rails through *separate* resistors — rather than treating "+12 V" as a single output — reflects the fact that the Coleco PSU is producing two physically independent +12 V supplies, and any meaningful load test must exercise both. As the remaining values are read off, this board will continue to offer a small but direct datum on Coleco's PSU performance envelope.

Per Kosowsky's account at the time of the sale, an unknown but small number of these boards were produced — likely one per repair technician at Coleco's service operation — and after more than forty years this may be the only surviving example. Whether or not that is literally true, the population of survivors is plainly small.

10. Open Investigations

#	Item	Status
10.1	Read remaining resistor values: R2 (large, 8340 date code), R3 (large, middle), R4 (brown ceramic), R6 and R7 (small vertical pair). Higher-resolution photographs of each body, or in-circuit DMM measurements with the harness disconnected, would close this.	OPEN
10.2	Trace the bottom-side copper to confirm which +12 V rail (Pin 1 = brown wire, Pin 2 = red wire) connects to R2 vs. R3, and to confirm the inferred assignment of R1 to Pin 3 and R5 to Pin 4. A continuity-mapped pinout would lock the board's internal topology to the published ADAM harness pinout.	OPEN
10.3	Determine the precise role of R4 (brown) and the R6/R7 pair: dedicated test-point tap dividers, auxiliary loads on a particular rail, bleeders, or some other function. Bottom-side continuity tracing would resolve this.	OPEN
10.4	Decode the meaning of the "AP" prefix in the Coleco P/N. Plausible expansions include "ADAM Production" or "ADAM Power"; a Coleco internal drawing index would resolve this.	OPEN
10.5	Locate any further Coleco internal documentation (service bulletin, lab procedure, drawing index) referencing P/N AP-83-C-076. The board is not catalogued in the existing Printer Logic Board Repair Guide (Doc #323-169.0).	OPEN
10.6	Survey AdamArchive.org, AtariAge ADAM forum, and the broader collector community for additional surviving examples.	OPEN

11. References

- **Coleco Industries, Inc.** *Printer Logic Board Repair Guide*, Document #323-169.0, Preliminary Draft 4/17/1985, First Revision 6/28/1985. Source for the four-rail PSU topology, the rail tolerance windows in §6, and the Coleco assembly part numbers (Power Supply Assembly 41240; Linear Power Supply Schematic 41234; Compuwriter PCB Assembly 41033; Logic Schematic 41218).
- **ADAM community service reference.** "Power for the ADAM" — DB-9 connector pinout diagram for the ADAM console's power input. Source for the §4.1 pinout assignments.

12. Acknowledgments

This analysis was produced by Richard DiRocco, operator of ColecoVisionADAM.com and AdamArchive.org, who acquired the board in June 2026 and supplied the photographs, the original seller's listing description, and the provenance information used here. Philip Kosowsky, former Coleco Test Laboratory employee, retained the board after Coleco's 1988 closure, operated it in service through Kosowsky's Adam Supplies until 1996, and held it in custody until the 2026 transfer. The operational and rarity testimony in this document — including the thermal-safety warning and the estimate of surviving examples — derives from Kosowsky's first-person experience as the original Coleco-era operator of the board.