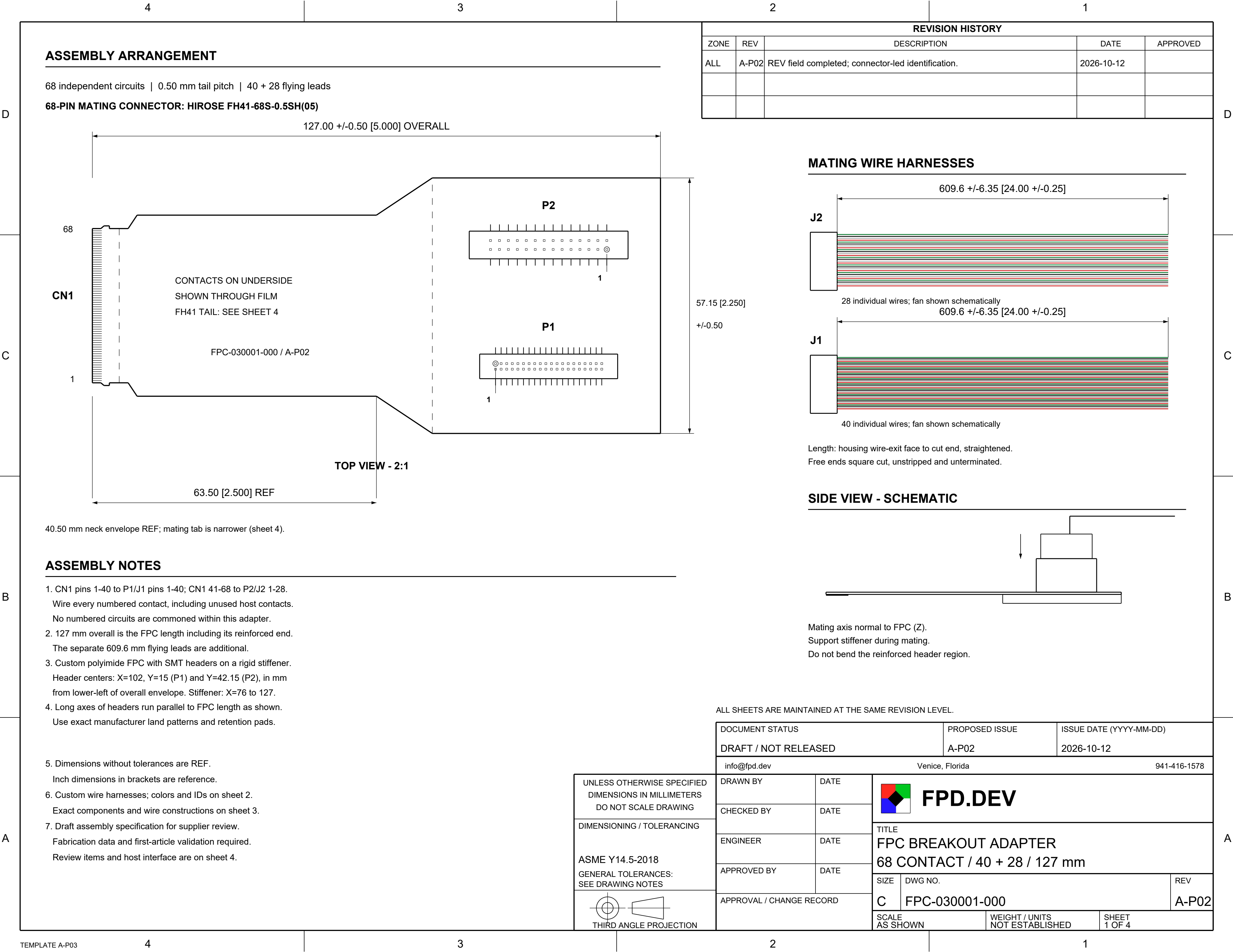




BILL OF MATERIALS AND HARNESS BUILD

ITEM	QTY	REFERENCE	MANUFACTURER / PART NUMBER	DESCRIPTION
1	1	FPC	Custom flex, per this drawing	68-way 0.50 mm FPC; 127 mm overall; reinforced SMT end; see sheet 4
2	1	P1	Hirose DF13EA-40DP-1.25V(52)	40-position, 2 x 20, 1.25 mm pitch, vertical SMT male header; gold
3	1	P2	Hirose DF11CZ-28DP-2V(27)	28-position, 2 x 14, 2.00 mm pitch, vertical SMT male header; tin
4	1	J1 housing	Hirose DF13-40DS-1.25C(10)	40-position crimp socket housing; contacts supplied separately
5	1	J2 housing	Hirose DF11-28DS-2C	28-position crimp socket housing; contacts supplied separately
6	40	J1 contacts	Hirose DF13-2630SCFA(41)	Gold female crimp sockets; 26-30 AWG; one per J1 wire
7	28	J2 contacts	Hirose DF11-2428SCF	Tin female crimp sockets; 24-28 AWG; one per J2 wire
8	10 leads	J1 Red	Alpha Wire 422807 RD005	28 AWG, 7/36 tinned copper; red PVC; 100 ft spool (005)
9	10 leads	J1 White	Alpha Wire 422807 WH005	28 AWG, 7/36 tinned copper; white PVC; 100 ft spool (005)
10	10 leads	J1 Black	Alpha Wire 422807 BK005	28 AWG, 7/36 tinned copper; black PVC; 100 ft spool (005)
11	10 leads	J1 Green	Alpha Wire 422807 GR005	28 AWG, 7/36 tinned copper; green PVC; 100 ft spool (005)
12	7 leads	J2 Red	Alpha Wire 3048 RD005	28 AWG, 7/36 tinned copper; red PVC; 100 ft spool (005)
13	7 leads	J2 White	Alpha Wire 3048 WH005	28 AWG, 7/36 tinned copper; white PVC; 100 ft spool (005)
14	7 leads	J2 Black	Alpha Wire 3048 BK005	28 AWG, 7/36 tinned copper; black PVC; 100 ft spool (005)
15	7 leads	J2 Green	Alpha Wire 3048 GR005	28 AWG, 7/36 tinned copper; green PVC; 100 ft spool (005)
16	1 set	Identification	Fabricator selected labels	FPC ID; P1/P2/J1/J2; 136 wire-end IDs; durable ink or labels

WIRE AND TERMINATION

A. J1: one 40-way housing, 40 gold contacts, 40 wires.

J2: one 28-way housing, 28 tin contacts, 28 wires.

Male header pins are integral; no separate pins required.

B. All leads: 609.6 +/-6.35 mm from housing wire exit.

Add insertion allowance and process waste to cut lengths.

C. J1 wire: Alpha 422807, UL 1061, 28 AWG 7/36.

Insulation OD 0.838-0.940 mm; DF13 range 0.56-1.00 mm.

D. J2 wire: Alpha 3048, UL 1007/1569, 28 AWG 7/36.

Insulation OD 1.143-1.245 mm; DF11 range 0.90-1.45 mm.

Wire families are not interchangeable without requalification.

E. Bare free ends are not required: leave insulation unstripped.

These custom harnesses replace the image UL 1571 leads.

MATERIAL QUANTITIES

Wire quantities are finished leads, not spool quantities.

J1: 6.096 m exposed length per color, plus termination/waste.

J2: 4.2672 m exposed length per color, plus termination/waste.

One 100 ft spool of each listed wire/color covers one assembly.

Purchase cut-tape contacts where available; allow crimp setup scrap.

Source register and sourcing observations are filed with this drawing.

BUILD AND INSPECTION

1. Match gold DF13 contacts to P1 and tin DF11 contacts to P2.
 2. Use qualified tooling and the current Hirose crimp conditions for each terminal/wire combination; do not pre-tin strands.
 3. Verify crimp retention, insulation support and cavity seating.
 4. Support the FPC stiffener during connector mating; provide harness strain relief so wire loads do not peel SMT joints.
 5. Test all 68 paths to sheet 2 and check for unintended shorts.
 6. Inspect SMT joints, IDs, lengths and tail surface condition.
 7. Record first-article results before fabrication release.
- Electrical load / bandwidth validation is application-specific.

GENERAL NOTES AND REVISION HISTORY: SEE SHEET 1.

ALL SHEETS ARE MAINTAINED AT THE SAME REVISION LEVEL.

DOCUMENT STATUS		PROPOSED ISSUE		ISSUE DATE (YYYY-MM-DD)		
DRAFT / NOT RELEASED		A-P02		2026-10-12		
info@fpd.dev		Venice, Florida		941-416-1578		
 FPD.DEV THIRD ANGLE DIMENSIONS IN MILLIMETERS		TITLE				
		FPC BREAKOUT ADAPTER				
		SIZE	DWG NO.		REV	
		C	FPC-030001-000		A-P02	
		SCALE AS SHOWN		SHEET 3 OF 4		

D

C

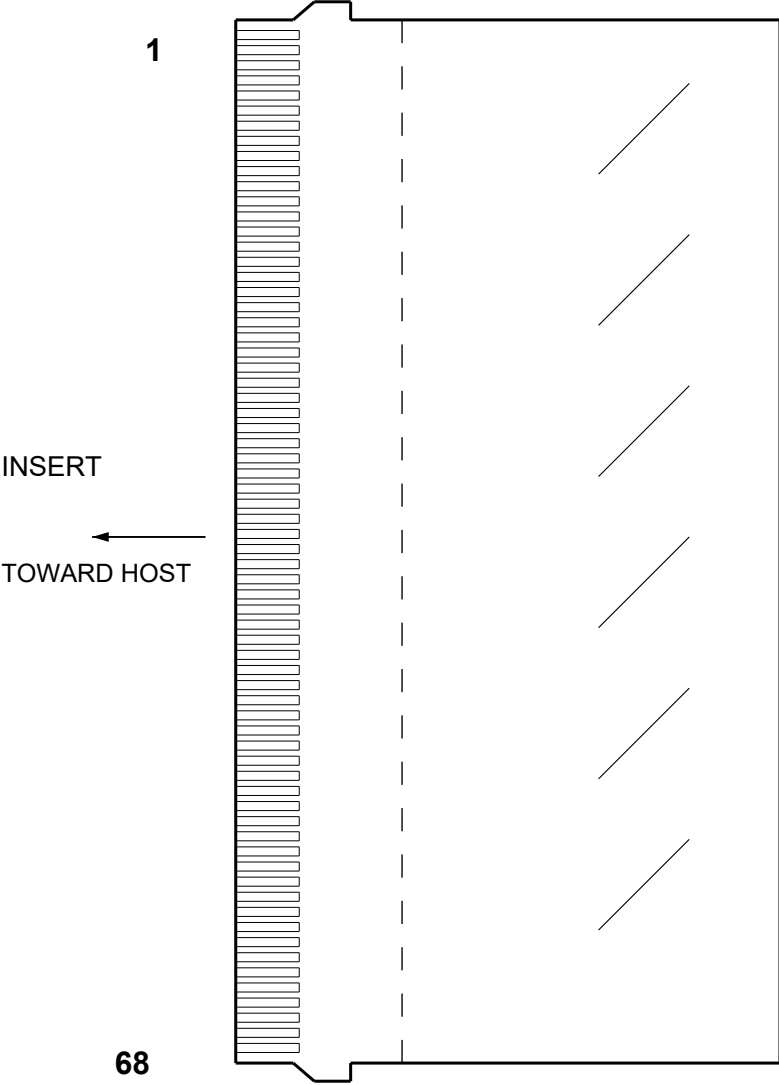
B

A

CN1 MATING INTERFACE AND FABRICATION REVIEW

68-pin Hirose FH41-68S-0.5SH(05) mating interface. Host receptacle is not supplied.

TAIL DETAIL - UNDERSIDE / CONTACT FACE



4:1 - nominal profile; corner radii not drawn

INTERFACE VALUES (mm)

- L: tab width 34.50 +/-0.07
- K: lock ear width 35.70 +/-0.10
- D: outer pad centers 33.50 +/-0.05
- Contact pitch 0.50 +/-0.05
- Contact width 0.30 +/-0.03
- Edge-to-outer pad center 0.50 +/-0.10
- End contact stack 0.30 +/-0.05
- Ground-plate zone stack 0.50 +/-0.05
- Contact exposure 2.10 +/-0.50
- Coverlay boundary 2.60 +/-0.50
- Ground-plate length 5.50 MIN
- Lock profile X: 1.90 / 2.60 / 3.80
- X tolerances: +/-0.10 each
- Radii and shield overlap: per source

SUPPLIER REVIEW / FIRST ARTICLE

- H1. Confirm the tail profile and stack against the actual legacy FH41-68S-0.5SH(05) before making production tooling.
 - Check full insertion, latch closure, retention and pin-1 polarity.
 - Confirm ground-contact engagement and shield construction.
- H2. Develop fabrication artwork, copper/coverlay stack, vias, contact plating thickness and rigid stiffener for SMT assembly.
 - Submit these and the strain-relief method for engineering review.
 - Use exact P1/P2 land patterns; no exposed routing in keep-outs.
- H3. Validate continuity and isolation on the first article; record dimensional inspection and mating results for all interfaces.
 - Verify the intended application electrical operation separately.
 - The 24-inch discrete wires have no assigned bandwidth rating.

PROPOSED ISSUE A-P02 / 2026-10-12

Assembly specification is complete for review; not fabrication release.

P/N FPC-030001-000; configuration 000. Approvals remain unassigned.

No hardware has been built or tested under this drawing.

PRODUCT AND INTERFACE LINKS (click in PDF):

FPC-030001-000 adapter | Hirose FH41 connector | Sharp panel example

INTERFACE BASIS

- A. Sharp LCY-12058A identifies the legacy FH41-68S-0.5SH(05) host connector.
 - Use the full SH designation for the mate.
- B. Current Hirose FH41 catalog p.4 lists the 68-contact geometry under suffix (28).
 - Values at left are that catalog geometry.
 - They do not authorize replacing the host.
- C. Gold-over-nickel contact fingers face opposite the P1/P2 component side.
 - Mark CN1 pin 1 on both FPC faces.
- D. Use the complete Hirose recommended tail profile, including lock ears, corner radii, ground-plate interface and overlap.
 - This detail is not a cutting-tool drawing.
- E. Provide a shield/ground-plate interface compatible with the host ground contacts.
 - Keep it isolated from all 68 numbered circuits inside this passive adapter.
 - Shield continuity and stack-up need review.

CONTROLLED SOURCE BASIS

- 1. Sharp specification LCY-12058A (2013).
 - 2. Hirose FH41 catalog, Oct. 1, 2026, pp.2-4.
 - 3. Hirose DF13 catalog and current part pages; DF13EA drawing EDCX-367982-52-00.
 - 4. Hirose DF11 catalog, Dec. 1, 2021, housing p.7, header pp.12-13, crimp p.16.
 - 5. Alpha Wire 422807 and 3048 specifications.
 - 6. User reference images plus final instruction: all 68 contacts, 40/28 split, 127 mm FPC.
- Exact URLs and saved reference files:
- Source register.csv in the product folder.

GENERAL NOTES AND REVISION HISTORY: SEE SHEET 1.

ALL SHEETS ARE MAINTAINED AT THE SAME REVISION LEVEL.

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SCALE AS SHOWN			SHEET 4 OF 4

A