

DISPLAY SYSTEMS · AIRBUS A320 FFS

Two faults, one flicker: recovering an A320 simulated display channel

Board-level repair of a damaged spare SDU, then end-to-end isolation of a failed DVI fibre-optic extender.



BEFORE Reported fault on the bench: a vertical white band across the SDU image.



AFTER Stable imagery on the A320 displays.

PLATFORM	ASSET	SCOPE	OUTCOME
Airbus A320 FFS display system	Simulated Display Unit, P/N 800597	Component repair and system fault isolation	Spare recovered, video path restored

01 The challenge

An A320 display channel showed flickering white lines and unstable imagery. The spare SDU could not be swapped in: it had its own connector damage and degraded components, and a full OEM replacement meant high cost and a long lead time.

02 What we did

We repaired the spare at component level and recommissioned it through staged bench checks. Used as a known-good reference, it showed the fault lay elsewhere, so we split the video chain into testable blocks.

03 The result

The fault was traced to the DVI fibre-optic extender (P/N 60-977-01) and replaced. The spare SDU went back into inventory and the display path was restored without a full-unit replacement.

Symptoms and constraints

Overlapping symptoms

Display electronics and the DVI link could both cause flicker, lines or loss of sync.

Limited documentation

Simulator-specific assembly required evidence-led diagnosis.

Configuration control

Every intervention had to preserve the assembly configuration and allow repeatable checks.

Unserviceable spare

The spare could not act as a diagnostic reference until repaired.

Replacement burden

High asset value and long factory turnaround for a full unit.

Diagnostic method

- 1 Record symptom and conditions**
Repeatable baseline; fixed vs intermittent
- 2 Inspect spare SDU internally**
Damage, aged parts, heat effects, poor joints
- 3 Repair connector and interconnects**
Restore retention and continuity
- 4 Replace capacitors and components**
Recover stable local power conditioning
- 5 Staged bench checks**
Continuity, shorts, supplies, start-up, video
- 6 Install or substitute repaired SDU**
Use it as a reliable reference
- 7 Segment the external video chain**
Source, DVI, fibre Tx, path, Rx, SDU
- 8 Identify and replace faulty extender**
Remove the remaining optical-link failure
- 9 Sustained functional checks**
Confirm the defect does not return

ROOT CAUSE · TWO SEPARATE DEFECTS

Asset level

A damaged connector and degraded components inside the spare SDU.

System level

A failed DVI fibre-optic extender, P/N 60-977-01, producing artefacts that mimicked a display fault.

VALIDATION

- No shorts, abnormal heating or unstable supplies
- Stable image, no recurring white lines
- Normal behaviour across repeated power and signal cycles
- Secure connections through source-to-display chain

Lessons for simulator operators

DIAGNOSE END TO END

A healthy screen can receive a corrupted signal. Treat artefacts as signal-chain problems.

KEEP VERIFIED SPARES

A damaged spare blocks the most useful substitution test.

INCLUDE FIBRE EXTENDERS

Active extenders fail in ways that look like panel or video-board faults.

Continued on page 3: video-path isolation, value delivered and a recommended troubleshooting sequence.

A320 Simulated Display Unit recovery

Why the first repair did not end the diagnosis

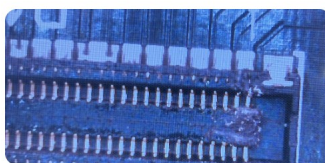
VIDEO-PATH BLOCK	CHECK PERFORMED	INTERPRETATION
Video source	Confirm the image generator outputs a valid signal	A stable source shifts attention downstream
Local DVI connections	Seating, connector condition, continuity	Rules out contact and copper-interface faults
Fibre transmitter	Power, link behaviour, substitution	Unstable Tx corrupts the optical signal
Optical path	Fibre condition, routing, continuity	Separates cable faults from active electronics
Fibre receiver	Power, output, substitution	A faulty Rx sends unstable DVI to a healthy display
Repaired SDU	Compare response with the recovered spare	Shows whether the fault follows the display



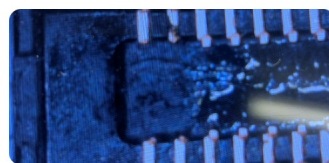
SDU opened: DVI, power and RS-232 interfaces.



Display electronics and interconnects (labels masked).



Fine-pitch connector under magnification.



Contamination around an IC package, magnified.

Result and value delivered

RECOVERED HARDWARE

Faulty SDU returned to function through targeted board-level repair

CORRECT DIAGNOSIS

Installed fault isolated to the extender, not misattributed to the display

LOWER LIFECYCLE COST

High-value assembly preserved; procurement limited to the failed link

LESS DOWNTIME EXPOSURE

A serviceable spare and a verified video path for future faults

REUSABLE KNOWLEDGE

Method applies to other channels with copper-to-fibre DVI transport

Recommended sequence for similar display faults

- 1 Capture the exact artefact, timing, temperature dependence and response to cable movement or restart
- 2 Confirm power quality and connector integrity at the display
- 3 Substitute only with a verified serviceable spare
- 4 Test source and display locally, bypassing the optical link
- 5 Swap fibre transmitter and receiver independently, then inspect the fibre
- 6 After repair, run repeated start-up and sustained-operation checks

When a high-value simulator component fails, replacement should not be the default.

simura.net
sales@simura.net