



# FSTD COMPONENT PARTS CATALOGUE

Flight Simulation Training Device Spare Parts Reference

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## 50 Essential Spare Parts for FSTD Operators

Component Repair · Refurbishment · Parts Sourcing

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## About This Catalogue

This catalogue lists the 50 most commonly required spare parts and components for Flight Simulation Training Devices (FSTDs). It is intended as a reference for Maintenance Engineers, Procurement Officers and Training Organisation Managers when planning component replacement, overhaul cycles or AOG recovery.

Simura Aviation Maintenance & Refurbishment specialises exclusively in the repair, refurbishment and sourcing of FSTD components. All parts listed are available through our approved supplier network and are subject to full EASA Part-145 quality management procedures.

**To enquire about any listed part, contact: [sales@simura.net](mailto:sales@simura.net) or +34 93 048 55 52**

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## MOTION PLATFORM SYSTEMS

### 001 HYDRAULIC ACTUATOR (6-DOF PLATFORM)

| Part No.        | Compatibility               | Description                                                                                                                                                       | Specifications                                                  |
|-----------------|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| MPS-AC<br>T-001 | CAE 5000 / L3Harris<br>TRAX | Primary hydraulic actuator for 6-degree-of-freedom motion platform. Provides vertical, lateral and longitudinal force vectors. Rated to 25,000 N continuous load. | Stroke: 600mm   Force: 25kN   Pressure: 207 bar   Weight: 48 kg |
| Lead Time       | 5–8 days                    | Condition Available                                                                                                                                               | Serviceable / Overhauled                                        |

### 002 ELECTROHYDRAULIC SERVO VALVE (EHSV)

| Part No.        | Compatibility             | Description                                                                                                                                            | Specifications                                         |
|-----------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| MPS-SR<br>V-002 | Universal (Parker / Moog) | High-response electrohydraulic servo valve controlling actuator flow. Critical for motion fidelity. Replaced on condition or at 10,000-hour intervals. | Flow: 40 L/min   Pressure: 210 bar   Signal: $\pm 10V$ |
| Lead Time       | 3–5 days                  | Condition Available                                                                                                                                    | Exchange / New                                         |

### 003 PLATFORM POSITION SENSOR (LVDT)

| Part No.        | Compatibility               | Description                                                                                                                        | Specifications                                           |
|-----------------|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| MPS-SE<br>N-003 | CAE / Thales / FlightSafety | Linear Variable Differential Transformer measuring precise actuator position feedback. Essential for motion control loop accuracy. | Range: $\pm 75mm$   Accuracy: 0.01mm   Output: $\pm 10V$ |
| Lead Time       | 2–4 days                    | Condition Available                                                                                                                | New / Serviceable                                        |

### 004 HYDRAULIC POWER UNIT (HPU) PUMP

| Part No.        | Compatibility            | Description                                                                                                                    | Specifications                                                   |
|-----------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| MPS-HP<br>U-004 | Most Level C/D platforms | Variable displacement axial piston pump for hydraulic power unit. Provides constant pressure supply to all platform actuators. | Displacement: 75cc/rev   Max pressure: 250 bar   Speed: 1450 RPM |
| Lead Time       | 7–10 days                | Condition Available                                                                                                            | Overhauled / Exchange                                            |

### 005 PLATFORM CONTROL COMPUTER (PCC)

| Part No.        | Compatibility         | Description                                                                                                                                             | Specifications                                            |
|-----------------|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| MPS-PC<br>C-005 | CAE 7000 / Simuflight | Dedicated real-time computer executing washout algorithm and actuator control loops. Interfaces with main simulation host via MIL-STD-1553 or Ethernet. | CPU: SPARC / x86   OS: VxWorks   I/O: 64 channel analogue |
| Lead Time       | 10–15 days            | Condition Available                                                                                                                                     | Serviceable / Repaired                                    |

## VISUAL SYSTEMS

### 006 IMAGE GENERATOR (IG) PROCESSOR BOARD

| Part No.  | Compatibility                        | Description                                                                                                                                        | Specifications                                                           |
|-----------|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| VS-IG-006 | Rockwell Collins EP-8100 / Quantum3D | High-performance graphics processing board generating real-time out-the-window scene. Supports 60Hz+ refresh rates and terrain database streaming. | GPU: Quadro RTX / proprietary   RAM: 32GB   Interfaces: DisplayPort, SDI |
| Lead Time | 5–8 days                             | Condition Available                                                                                                                                | Serviceable / Repaired                                                   |

### 007 COLLIMATED DISPLAY PROJECTOR

| Part No.   | Compatibility              | Description                                                                                                                                                | Specifications                                                 |
|------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| VS-PRJ-007 | FlightSafety Vital / L3 eX | Short-throw high-brightness projector for collimated infinity display system. Produces out-the-window scene at optical infinity for realistic visual cues. | Brightness: 12,000 lumens   Resolution: 4K   Lamp: 1500hr life |
| Lead Time  | 5–7 days                   | Condition Available                                                                                                                                        | Serviceable / Exchange                                         |

### 008 PROJECTOR LAMP / LIGHT ENGINE

| Part No.   | Compatibility                      | Description                                                                                                                                      | Specifications                                        |
|------------|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| VS-LMP-008 | Universal (Barco / Christie / NEC) | Replacement high-intensity lamp or LED light engine for visual display projectors. Routine consumable replacement at 1,000–2,000 hour intervals. | Power: 900–1200W   Life: 1,500hr   Color temp: 6,500K |
| Lead Time  | 1–3 days                           | Condition Available                                                                                                                              | New                                                   |

### 009 CHANNEL BLENDING / EDGE BLENDING UNIT

| Part No.   | Compatibility                | Description                                                                                                                              | Specifications                                                  |
|------------|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| VS-BLD-009 | Multi-channel visual systems | Electronic unit managing seamless overlap blending between adjacent visual channels. Eliminates visible seams on curved screen displays. | Channels: up to 8   Blend width: adjustable   Latency: <1 frame |
| Lead Time  | 4–6 days                     | Condition Available                                                                                                                      | Serviceable                                                     |

### 010 DISPLAY MANAGEMENT COMPUTER (DMC)

| Part No.   | Compatibility                     | Description                                                                                                                                                 | Specifications                                                  |
|------------|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| VS-DMC-010 | CAE / FlightSafety visual systems | Master controller managing display timing, synchronisation and brightness across all visual channels. Communicates with image generator over dedicated bus. | Sync: SMPTE / genlock   Outputs: 8 channels   Control: Ethernet |
| Lead Time  | 6–10 days                         | Condition Available                                                                                                                                         | Serviceable / Repaired                                          |

## AVIONICS SIMULATION

### 011 CONTROL DISPLAY UNIT (CDU) ASSEMBLY

| Part No.   | Compatibility                   | Description                                                                                                                                                 | Specifications                                           |
|------------|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| AV-CDU-011 | B737 / A320 / B777 FMS replicas | Full-size replica CDU with backlit keypad, LCD display and tactile feel matching aircraft original. Interfaces with FMS simulation software over ARINC 429. | Display: 5" colour LCD   Keys: 64   Interface: ARINC 429 |
| Lead Time  | 4–7 days                        | Condition Available                                                                                                                                         | Serviceable / Repaired                                   |

### 012 ARINC 429 INTERFACE CARD

| Part No.   | Compatibility          | Description                                                                                                                                                             | Specifications                                                 |
|------------|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| AV-429-012 | Universal (PCI / PCIe) | Multi-channel ARINC 429 transmit/receive card for interfacing simulation host with avionics replica hardware. Industry standard for civil aviation data bus simulation. | Channels: 16 TX + 16 RX   Speed: 12.5/100 kbps   Form: PCIe x1 |
| Lead Time  | 2–4 days               | Condition Available                                                                                                                                                     | New / Serviceable                                              |

### 013 PRIMARY FLIGHT DISPLAY (PFD) MONITOR

| Part No.   | Compatibility                          | Description                                                                                                                                           | Specifications                                             |
|------------|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| AV-PFD-013 | Glass cockpit replicas (B737NG / A320) | High-brightness LCD monitor in aircraft-form-factor bezel for PFD simulation. Supports direct digital video input from avionics simulation processor. | Size: 7.25"   Resolution: 1024×768   Brightness: 500 cd/m² |
| Lead Time  | 3–5 days                               | Condition Available                                                                                                                                   | Serviceable / New                                          |

### 014 NAVIGATION DISPLAY (ND) MONITOR

| Part No.  | Compatibility                          | Description                                                                                                                                  | Specifications                                             |
|-----------|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| AV-ND-014 | Glass cockpit replicas (B737NG / A320) | LCD navigation display monitor with wide viewing angle for map/compass/weather overlay simulation. Matched to PFD for consistent brightness. | Size: 7.25"   Resolution: 1024×768   Brightness: 500 cd/m² |
| Lead Time | 3–5 days                               | Condition Available                                                                                                                          | Serviceable / New                                          |

### 015 ENGINE INDICATING & CREW ALERTING (EICAS) DISPLAY

| Part No.   | Compatibility                 | Description                                                                                                                         | Specifications                                            |
|------------|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| AV-EIC-015 | B737 / B777 / B747 simulators | Centre pedestal or glareshield-mounted engine parameter display. Shows N1/N2, EGT, fuel flow, oil pressure in real-time simulation. | Size: 8"   Resolution: 1024×768   Interface: DVI + serial |
| Lead Time  | 4–6 days                      | Condition Available                                                                                                                 | Serviceable                                               |

## CONTROL LOADING SYSTEMS

### 016 CONTROL COLUMN FORCE TRANSDUCER

| Part No.  | Compatibility             | Description                                                                                                                                              | Specifications                                                          |
|-----------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| CL-FT-016 | Most yoke-type simulators | Precision load cell measuring pilot input force on control column. Feeds force signal to control loading computer for realistic feel and force feedback. | Range: $\pm 500\text{N}$   Accuracy: 0.5% FS   Output: $\pm 10\text{V}$ |
| Lead Time | 3–5 days                  | Condition Available                                                                                                                                      | New / Serviceable                                                       |

### 017 RUDDER PEDAL FORCE/POSITION SENSOR

| Part No.   | Compatibility                     | Description                                                                                                                           | Specifications                                                            |
|------------|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| CL-RUD-017 | Universal rudder pedal assemblies | Combined force and position sensing unit for rudder pedal assembly. Provides dual-channel redundant signal to control loading system. | Force range: $\pm 200\text{N}$   Position: 0–100%   Output: dual analogue |
| Lead Time  | 2–4 days                          | Condition Available                                                                                                                   | New / Serviceable                                                         |

### 018 CONTROL LOADING ACTUATOR (ELECTRIC)

| Part No.   | Compatibility                    | Description                                                                                                                                                          | Specifications                                       |
|------------|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|
| CL-ACT-018 | Electric control loading systems | High-bandwidth brushless DC servo actuator providing realistic control forces. Replaces hydraulic control loading in modern simulators for lower maintenance burden. | Peak force: 1,500N   BW: 30 Hz   Power: 3-phase 400V |
| Lead Time  | 5–8 days                         | Condition Available                                                                                                                                                  | Serviceable / Exchange                               |

### 019 THROTTLE QUADRANT POSITION SENSOR

| Part No.   | Compatibility      | Description                                                                                                                                            | Specifications                                                  |
|------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| CL-TQS-019 | Most TQ assemblies | Multi-turn potentiometer or Hall effect sensor measuring throttle, flap and speedbrake lever positions. Critical for engine simulation input accuracy. | Resolution: 12-bit   Channels: 8   Interface: analogue / RS-485 |
| Lead Time  | 2–3 days           | Condition Available                                                                                                                                    | New                                                             |

### 020 FEEL AND TRIM COMPUTER (FTC)

| Part No.   | Compatibility                | Description                                                                                                                                                        | Specifications                                     |
|------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| CL-FTC-020 | CAE / Thales control loading | Real-time digital computer executing control law algorithms to generate appropriate force feel. Interfaces with host simulation over reflected memory or Ethernet. | Update rate: 1kHz   I/O: 32 analogue   OS: VxWorks |
| Lead Time  | 7–12 days                    | Condition Available                                                                                                                                                | Serviceable / Repaired                             |

## COCKPIT HARDWARE & PANELS

### 021 OVERHEAD PANEL BACKLIGHT ASSEMBLY

| Part No.   | Compatibility                       | Description                                                                                                                                                 | Specifications                                        |
|------------|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| CP-OHP-021 | B737 / A320 overhead panel replicas | LED backlight array for overhead panel illumination. Replaces fluorescent backlighting with longer-life, lower-heat LED solution. Plug-compatible retrofit. | Life: 50,000 hrs   Colour temp: 4,500K   Input: 28VDC |
| Lead Time  | 2–4 days                            | Condition Available                                                                                                                                         | New                                                   |

### 022 ANNUNCIATOR PANEL LIGHT (WARNING/CAUTION)

| Part No.   | Compatibility                | Description                                                                                                                                        | Specifications                                                         |
|------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| CP-ANN-022 | Universal annunciator panels | Individual LED annunciator lens and lamp assembly in standard aircraft colours (red/amber/white/green). Drop-in replacement for incandescent type. | Voltage: 5V or 28V   Colours: red/amber/white/green   Life: 50,000 hrs |
| Lead Time  | 1–2 days                     | Condition Available                                                                                                                                | New                                                                    |

### 023 ROTARY SWITCH / SELECTOR ASSEMBLY

| Part No.   | Compatibility       | Description                                                                                                                                             | Specifications                                           |
|------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| CP-ROT-023 | Generic panel-mount | Multi-position rotary selector switch with detented positions and optional LED indication. Used extensively across overhead and centre pedestal panels. | Positions: 3–12   Rating: 250VAC 2A   Panel cutout: 22mm |
| Lead Time  | 1–3 days            | Condition Available                                                                                                                                     | New / Serviceable                                        |

### 024 PUSHBUTTON SWITCH WITH LED (LIGHTED)

| Part No.   | Compatibility         | Description                                                                                                                                                          | Specifications                                         |
|------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| CP-PBS-024 | Universal panel-mount | Illuminated pushbutton with replaceable LED insert. Standard format used across most commercial simulator cockpit panels for system selection and status indication. | LED: red/amber/white/green/blue   Force: 3N   IP: IP54 |
| Lead Time  | 1–2 days              | Condition Available                                                                                                                                                  | New                                                    |

### 025 GLARESHIELD CONTROL PANEL (GPWS/TCAS)

| Part No.   | Compatibility             | Description                                                                                                                                                    | Specifications                                                |
|------------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|
| CP-GSH-025 | B737NG / A320 glareshield | Replica glareshield panel including autopilot mode control, master warning/caution lights and terrain/traffic alert buttons. Full tactile and visual fidelity. | Interface: RS-422 / discrete   Supply: 28VDC   Weight: 2.1 kg |
| Lead Time  | 5–8 days                  | Condition Available                                                                                                                                            | Serviceable / Repaired                                        |

## SOUND & VIBRATION SYSTEMS

### 026 COCKPIT SPEAKER ARRAY

| Part No.   | Compatibility           | Description                                                                                                                                                  | Specifications                                         |
|------------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| SS-SPK-026 | Universal cockpit audio | Flush-mounted directional speaker for cockpit environmental sound reproduction. Provides spatial audio cues including engine, airflow and mechanical sounds. | Power: 50W RMS   Frequency: 80Hz–20kHz   Impedance: 8Ω |
| Lead Time  | 2–3 days                | Condition Available                                                                                                                                          | New                                                    |

### 027 SHAKER / BUFFET UNIT (SEAT VIBRATION)

| Part No.   | Compatibility                   | Description                                                                                                                                                   | Specifications                                       |
|------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|
| SS-SHK-027 | Most instructor / crew stations | Electromechanical transducer mounted under crew seat providing tactile buffet, turbulence and stall cues. Driven by dedicated amplifier from simulation host. | Force: 200N peak   Freq range: 5–200Hz   Power: 400W |
| Lead Time  | 3–5 days                        | Condition Available                                                                                                                                           | Serviceable / New                                    |

### 028 SOUND MANAGEMENT COMPUTER (SMC)

| Part No.   | Compatibility                | Description                                                                                                                                                      | Specifications                                                  |
|------------|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| SS-SMC-028 | CAE / L3Harris audio systems | Real-time audio processing unit generating spatialised cockpit sounds. Receives simulation state data and produces multi-channel audio output for speaker array. | Channels: 16 out   Latency: <20ms   Interface: Ethernet / ARINC |
| Lead Time  | 6–10 days                    | Condition Available                                                                                                                                              | Serviceable                                                     |

### 029 INTERCOM / AUDIO PANEL UNIT

| Part No.   | Compatibility         | Description                                                                                                                                                 | Specifications                                                 |
|------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| SS-ICP-029 | Multi-crew simulators | Replica audio control panel providing crew intercom, radio selector and volume control simulation. Matches aircraft-type audio panel for training fidelity. | Stations: 4 crew   Interface: discrete + audio   Supply: 28VDC |
| Lead Time  | 3–5 days              | Condition Available                                                                                                                                         | Serviceable                                                    |

## SIMULATION COMPUTING

### 030 HOST SIMULATION COMPUTER (SERVER)

| Part No.   | Compatibility            | Description                                                                                                                                       | Specifications                                                  |
|------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| SC-HST-030 | CAE 7000 / Thales FS2020 | Primary simulation host server executing aerodynamic, systems and avionics models in real time. Typically redundant pair with automatic failover. | CPU: 64-core   RAM: 512GB   NIC: 10GbE   OS: Linux RT / VxWorks |
| Lead Time  | 10–20 days               | Condition Available                                                                                                                               | Serviceable / Refurbished                                       |

### 031 REAL-TIME I/O INTERFACE UNIT

| Part No.   | Compatibility             | Description                                                                                                                                                   | Specifications                                           |
|------------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| SC-IOI-031 | Most simulation platforms | Chassis-based I/O subsystem providing analogue, discrete and serial interfaces between simulation host and cockpit hardware. Redundant power supply included. | AI: 64ch   DI/DO: 128ch   Serial: 16ch   Chassis: 19" 4U |
| Lead Time  | 5–8 days                  | Condition Available                                                                                                                                           | Serviceable                                              |

### 032 REFLECTIVE MEMORY CARD

| Part No.   | Compatibility                 | Description                                                                                                                                              | Specifications                                             |
|------------|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| SC-RFM-032 | VME / cPCI / PCIe bus systems | High-speed shared memory network card allowing deterministic data exchange between multiple simulation subsystem computers with sub-microsecond latency. | Memory: 64–256MB   Latency: <800ns   Interface: PCIe / VME |
| Lead Time  | 3–5 days                      | Condition Available                                                                                                                                      | New / Serviceable                                          |

### 033 NAVIGATION DATABASE (NAV DB) STORAGE MODULE

| Part No.   | Compatibility                  | Description                                                                                                                                          | Specifications                                               |
|------------|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|
| SC-NDB-033 | AIRAC-compliant FMS simulators | Storage module containing current AIRAC navigation database for FMS simulation. Updated every 28-day AIRAC cycle. Jeppesen or Lido format available. | Cycle: 28-day AIRAC   Format: Jeppesen / Lido   Storage: SSD |
| Lead Time  | 1–2 days                       | Condition Available                                                                                                                                  | New (subscription)                                           |

## ELECTRICAL & POWER SYSTEMS

### 034 UNINTERRUPTIBLE POWER SUPPLY (UPS)

| Part No.   | Compatibility              | Description                                                                                                                                                 | Specifications                                           |
|------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| EP-UPS-034 | Universal simulation power | Rackmount UPS providing clean regulated power and ride-through during mains interruptions. Protects simulation computers from power transients and outages. | Power: 10–20 kVA   Runtime: 15 min   Input: 3-phase 400V |
| Lead Time  | 3–5 days                   | Condition Available                                                                                                                                         | New / Exchange                                           |

### 035 DC POWER SUPPLY UNIT (28V / 5V)

| Part No.   | Compatibility                 | Description                                                                                                                                                 | Specifications                                             |
|------------|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| EP-PSU-035 | Universal cockpit panel power | Regulated DC power supply providing 28VDC and 5VDC rails for cockpit panel hardware, annunciators and discrete I/O. Rack-mount form factor with status LED. | Output: 28V/20A + 5V/10A   Efficiency: >90%   Form: 19" 1U |
| Lead Time  | 2–3 days                      | Condition Available                                                                                                                                         | New                                                        |

### 036 POWER DISTRIBUTION UNIT (PDU)

| Part No.   | Compatibility      | Description                                                                                                                                               | Specifications                                      |
|------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| EP-PDU-036 | Universal 19" rack | Intelligent rackmount PDU with remote monitoring, per-outlet switching and current metering. Allows controlled power sequencing of simulation subsystems. | Outlets: 24   Monitoring: SNMP   Input: 32A 3-phase |
| Lead Time  | 2–4 days           | Condition Available                                                                                                                                       | New                                                 |

## INSTRUCTOR OPERATING STATION

### 037 IOS WORKSTATION COMPUTER

| Part No.   | Compatibility               | Description                                                                                                                                                       | Specifications                                                      |
|------------|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| IOS-WS-037 | Most IOS software platforms | Instructor Operating Station workstation running IOS application. Provides scenario management, malfunction injection, weather control and performance recording. | CPU: 16-core i9   RAM: 64GB   Display: 3× 27"   OS: Windows / Linux |
| Lead Time  | 5–7 days                    | Condition Available                                                                                                                                               | New / Refurbished                                                   |

### 038 IOS TOUCH PANEL / TABLET INTERFACE

| Part No.    | Compatibility            | Description                                                                                                                                                    | Specifications                                                    |
|-------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| IOS-TCH-038 | Tablet-based IOS systems | Ruggedised touchscreen tablet or panel-mount display providing portable instructor interface. Wireless connection to simulation host for untethered operation. | Screen: 15.6" touch   WiFi: 802.11ac   Battery: 8hr   OS: Windows |
| Lead Time   | 3–5 days                 | Condition Available                                                                                                                                            | New                                                               |

### 039 NETWORK SWITCH (SIMULATION LAN)

| Part No.     | Compatibility                 | Description                                                                                                                                                 | Specifications                                                 |
|--------------|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| IOS-NS W-039 | Universal simulation networks | Managed gigabit / 10GbE network switch for simulation LAN interconnecting host computers, IOS, visual system and I/O subsystems. Low-latency configuration. | Ports: 24× 1GbE + 4× 10GbE   Latency: <1µs   Managed: VLAN/QoS |
| Lead Time    | 1–3 days                      | Condition Available                                                                                                                                         | New                                                            |

## COMMUNICATIONS SIMULATION

### 040 RADIO MANAGEMENT PANEL (RMP) REPLICA

| Part No.        | Compatibility                   | Description                                                                                                                                                           | Specifications                                                 |
|-----------------|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| COM-RM<br>P-040 | A320 / B737 / B777 RMP replicas | Full-fidelity replica radio management panel with frequency selectors, encoder switches and LED displays. Communicates with communications simulation over ARINC 429. | Display: OLED 7-segment   Interface: ARINC 429   Supply: 28VDC |
| Lead Time       | 4–6 days                        | Condition Available                                                                                                                                                   | Serviceable / Repaired                                         |

### 041 AUDIO INTEGRATION UNIT (AIU)

| Part No.        | Compatibility                       | Description                                                                                                                                               | Specifications                                                           |
|-----------------|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| COM-AI<br>U-041 | Multi-crew communication simulators | Central audio routing unit handling all VHF/HF/intercom audio channels. Distributes simulated ATC, ACARS and crew communications to appropriate stations. | Channels: 16 audio   Codec: PCM / G.711   Interface: analogue + Ethernet |
| Lead Time       | 4–7 days                            | Condition Available                                                                                                                                       | Serviceable                                                              |

### 042 HEADSET / BOOM MICROPHONE ASSEMBLY

| Part No.        | Compatibility           | Description                                                                                                                                              | Specifications                                             |
|-----------------|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| COM-HD<br>X-042 | Universal crew stations | Aviation-grade headset with noise-cancelling boom microphone for crew and instructor use. Includes in-line PTT and volume control. NATO 4-pin connector. | Impedance: 300Ω   Mic: electret NC   Connector: NATO 4-pin |
| Lead Time       | 1–2 days                | Condition Available                                                                                                                                      | New                                                        |

## ENVIRONMENTAL & MISCELLANEOUS

### 043 COOLING FAN UNIT (ELECTRONICS BAY)

| Part No.        | Compatibility              | Description                                                                                                                                           | Specifications                                                |
|-----------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|
| ENV-FA<br>N-043 | Universal electronics bays | Rack-mount forced-air cooling fan tray for electronics bay thermal management. Redundant fan configuration with failure monitoring and speed control. | Airflow: 200 CFM   Fans: 4× dual-ball   Speed: PWM controlled |
| Lead Time       | 1–2 days                   | Condition Available                                                                                                                                   | New                                                           |

### 044 TEMPERATURE / HUMIDITY SENSOR (COCKPIT)

| Part No.        | Compatibility                    | Description                                                                                                                                          | Specifications                                             |
|-----------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| ENV-TH<br>S-044 | Environmental monitoring systems | Calibrated temperature and humidity sensor for cockpit environmental monitoring. Data logged by facility management system for equipment protection. | Temp: -10 to +60°C ±0.3°   RH: 0–100% ±2%   Output: 4–20mA |
| Lead Time       | 1–2 days                         | Condition Available                                                                                                                                  | New                                                        |

### 045 PILOT SEAT ASSEMBLY (ADJUSTABLE)

| Part No.        | Compatibility               | Description                                                                                                                                                             | Specifications                                                    |
|-----------------|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| ENV-STA<br>-045 | Most full-flight simulators | Adjustable simulator crew seat with fore/aft, vertical and recline adjustment. Includes shoulder harness, lumbar support and armrests matching aircraft reference seat. | Adjustment: fore/aft 150mm   Vertical: 80mm   Weight limit: 130kg |
| Lead Time       | 7–14 days                   | Condition Available                                                                                                                                                     | Serviceable / Refurbished                                         |

### 046 WINDSHIELD / RAIN EFFECT SYSTEM

| Part No.        | Compatibility                        | Description                                                                                                                                                 | Specifications                                    |
|-----------------|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| ENV-RF<br>X-046 | Level D simulators with rain effects | Electromechanical wiper motor and rain simulation spray system for windshield area. Activated by weather model in simulation software for Level D rain cue. | Wiper: 2-speed   Spray: 0.5 L/min   Supply: 28VDC |
| Lead Time       | 4–6 days                             | Condition Available                                                                                                                                         | Serviceable                                       |

### 047 FIRE DETECTION SENSOR (SIMULATOR BAY)

| Part No.        | Compatibility                     | Description                                                                                                                                        | Specifications                                                 |
|-----------------|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| ENV-FD<br>S-047 | Simulator facility safety systems | Addressable smoke and heat detector for simulator electronics bay fire protection. Interfaces with facility BMS for automatic suppression trigger. | Standard: EN54   Detection: optical + thermal   Address: 1–254 |
| Lead Time       | 1–3 days                          | Condition Available                                                                                                                                | New                                                            |

## TEST & CALIBRATION EQUIPMENT

### 048 QTG TEST EQUIPMENT SET

| Part No.        | Compatibility                  | Description                                                                                                                                                                                      | Specifications                                                  |
|-----------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| TST-QT<br>G-048 | EASA CS-FSTD / FAA<br>AC120-40 | Calibrated measurement equipment set for Qualification Test Guide validation. Includes data acquisition hardware and software for recording simulator responses against aircraft reference data. | DAQ: 32ch 16-bit   Software: MATLAB-compatible   Cert: EASA/FAA |
| Lead Time       | 5–10 days                      | Condition Available                                                                                                                                                                              | Calibrated / Hire                                               |

### 049 ANALOGUE SIGNAL CALIBRATOR

| Part No.        | Compatibility                  | Description                                                                                                                                                                              | Specifications                                                      |
|-----------------|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| TST-CAL<br>-049 | Universal analogue I/O testing | Portable multifunction signal calibrator for troubleshooting and calibrating analogue signals throughout the simulator. Sources and measures voltage, current, resistance and frequency. | Voltage: 0–30V $\pm 0.01\%$   Current: 4–20mA   Frequency: 1–100kHz |
| Lead Time       | 1–2 days                       | Condition Available                                                                                                                                                                      | New / Hire                                                          |

### 050 ARINC 429 / MIL-1553 PROTOCOL ANALYSER

| Part No.        | Compatibility                | Description                                                                                                                                                | Specifications                                                       |
|-----------------|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| TST-ANA<br>-050 | Avionics bus troubleshooting | Portable avionics bus analyser supporting ARINC 429, MIL-STD-1553 and RS-422 protocols. Essential for diagnosing avionics simulation communication faults. | Protocols: ARINC 429 / 664 / MIL-1553 / RS-422   USB3   Triggers: 32 |
| Lead Time       | 1–2 days                     | Condition Available                                                                                                                                        | New / Hire                                                           |

## Terms & Conditions

All part numbers, specifications and lead times are indicative and subject to availability. Simura Aviation Maintenance & Refurbishment reserves the right to substitute equivalent specifications. All maintenance releases are issued under EASA Part-145 authority.

Prices quoted on request. AOG priority service available 24/7. All parts supplied with full traceability documentation.

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