

AFSWITCH

Copperchase AFTN Message Switch

The Automatic AFTN Message Switch from Copperchase, created for ATC using our extensive experience of the aviation marketplace. AFSWITCH has been specifically designed for AFTN use, meeting the requirements of the current issue of ICAO Annex 10. The Switch provides full connectivity to the Copperchase AFGATE & AFTERM products.

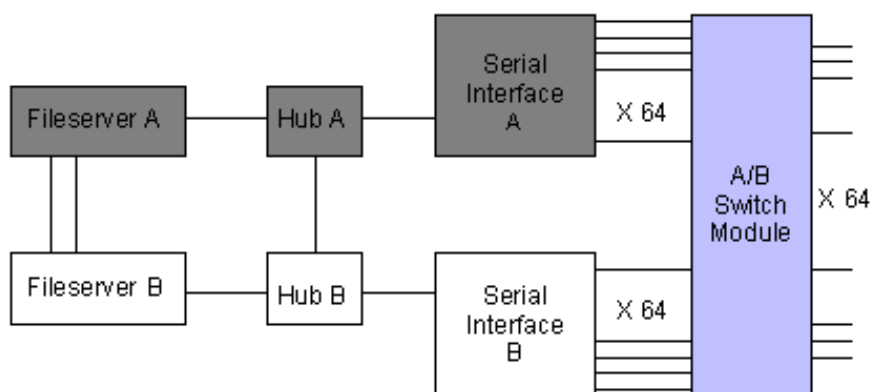
Copperchase hardware and software platforms are well proven through extensive use within the AFTN Network and commercially operated message switches worldwide. An ongoing development programme ensures that the software keeps pace with technological advances. It can also handle up to 64 serial connections, and is supplied configured for each application.

System Description

AFSWITCH is designed for non-stop 24 hour operation; its core consists of two mirrored file servers plus a pair of powerful serial communications processors. These are linked by a resilient high speed Ethernet LAN. The serial ports are connected via A/B switching units to the relevant line interfaces.

The mirrored file servers use replication software with high speed connection between the units. The operating system uses this high speed link to ensure that the disk and memory content of the two systems are identical. In the event of failure the secondary unit takes over without loss of data or disruption to any connected network user.

The serial interface module(s) run with one set on-line while the other monitors the on-line system, ready to take over instantly if needed. The CPU changeover unit assists in co-ordinating the two CPUs allowing for manual changeover. When changeover occurs, messages being transmitted or received will be interrupted by the hardware changeover. AFTN message sequence numbering allows AFTN systems to request a re-send of interrupted messages - this is done automatically by AFSWITCH.



Sample Schematic for a 64-port AFSWITCH

User-Friendly

The Man Machine Interface for AFSWITCH is driven by user-friendly menu systems based in MS Windows, reassuringly familiar to the majority of users, intuitively simple to learn for those new to computers. AFSWITCH offers AFTN format verification through the use of simple Form-fills. Copperchase form-fills are based on the ICAO approved Flight Plan as defined in Doc. 4444, though we are equally ready to meet special requirements.

*Automatic AFTN
Message Switching
System with
integration to Airport
Admin and other Air
Traffic Control
systems.*

STANDARD FEATURES

- Fault tolerant configuration
- ICAO Annex 10
- AFTN Routing
- Content Routing
- Message Journal
- Message Archive & Retrieval
- Simple User Interface
- Based on Windows & Menus
- On-line Configuration
- 50 - 9,600bps line speed
- Up to 64 serial ports
- Network Interfacing
- Integration Options
- ICAO Statistics

Software Features

AFSWITCH Software - comprises a collection of tasks running on a multi-tasking operating system on the serial interface modules. It uses industry standard components and data formats where possible, e.g., Journal/Archive uses dBase format to allow access by standard spreadsheets and databases. Resilient data storage is provided by the mirrored file servers.

Line Interface - provides outgoing message format (AFTN) generation. It supports ITA2 (Baudot) & ITA5 (ASCII) character sets. All circuit parameters can be modified by the supervisor without stopping the system. NB: setting a circuit to high level or Telex requires physical connection of the appropriate interface.

Journal & Archive - received & transmitted message text and message journals are stored in an integrated database to allow easy searching and retrieval. There are facilities to transfer the archive database to optical disk for storage or additional analysis elsewhere.

Routing - supports routing by AFTN address and & trunk routing according to ICAO tables. Also local routing by message type (e.g., FPL to Flight Data Processing System). These tables can be changed on-line without stopping the system.

Statistics - summaries are generated daily at midnight or on Supervisor request. The midnight summaries give the previous day's circuit and system traffic totals. Monthly and year to date summaries are by supervisor request. User can also define additional summaries as required by using standard spreadsheet packages.

Terminal Positions

(All comprise PC with colour screen connected to the Ethernet LAN).

Engineering Terminal - this position has full control of the CPU module & can be used as the Supervisor position.

Message Reject Terminal - This position is used for the handling & repair of out of format or problematic messages, can also be used as a message input terminal.

Supervisor Terminal - this position has full control of the AFSWITCH and uses an enhanced version of AFTERM.

Message Preparation Terminal - This position can either be on the LAN or a remote connection via the serial interface. The use of modems and/or line drivers is subject to line type and location.

Modules

File servers - rack-mounted processor with high reliability disks (typically 250,000 hours MTBF). The file servers are inter-connected by a high speed mirrored server link and multiple Ethernet cards into the hubs.

Serial Interface Modules - rack-mounted processor unit with up to sixty four serial ports. These modules are connected to dual Ethernet Hubs to allow resilient communication with the file servers.

LAN - The system supports dual hubs. One dedicated to the AMS, the other can be a cost effective method for connecting local terminals, i.e.: AFTERM. Extra circuits can be supported by the use of additional serial interface modules.



Datasheet Reference: DS4 02/02/01

Optional Features

See Datasheet

Telecomms Interfaces	Dial-up PSTN, Telegraph, Fax, Telex, X25, TCP/IP (Internet).	
Briefing	Software module giving terminal access to briefing databases held on a Copperchase AFGATE.	DS7
SITA	Allows reception and transmission of SITA messages over AFTN network and vice versa.	DS6
Interfaces to other Systems	Airport Administration Flight Data Management Airport Remote Management Unit Airport Clock	

APECUS Technologies Pte Ltd
 1090 Lower Delta Road #07-08/09 Singapore 169201
 Tel: (65) 6273 9100 Fax: (65) 6273 8113
 Email: sales@apecus.com
 Web: www.apecus.com