The SKYWAN family of VSAT networking products is complemented by the FAD 9140, a compact high performance universal access device of latest technology. The FAD 9140 is an standalone chassis designed for network convergence at the central and branch office level.

The FAD 9140 is a high speed, low cost, flexible and compact unit that supports 16 analog or 120 digital telephony channels in a multitude of application scenarios. The universal access device provides concentration and switching of packetized voice as well as data from the LAN ports and/or the serial interfaces. Being specifically adapted to the SKYWAN VSAT system, the combination of both defines the state of the art for voice quality in packetized transmissions over satellite. Bandwidth usage is minimized through efficient compression and dynamically call set-up.

Extension interface cards add optional hardware interfaces to the unit. They provide a physical interface to external devices and networks, scalable to the needs of your application. The interface cards slide into slots located at the rear of the unit. The FAD 9140 uses the same interface boards as the FAD 9220/9230, however the FAD 9140 has a low profile chassis requiring only 1 Rack Unit of space. Consequently, the FAD 9140 interface cards must also be low profile using different faceplate than the FAD 9220/9230. Replacement kits are available to convert regular interface cards into low profile interface cards by exchanging the faceplate.

Designed to provide maximum network performance and reliability in low-bandwidth environments, the FAD 9140 reduces network infrastructure costs and simplifies WAN connectivity for mission-critical applications. The FAD 9140 provides a safe migration path from legacy TDM or Frame Relay networks to IP-centric networks. It includes support for the latest VoIP (SIP) and Eurocae WG67 ED-136/137 standards and robust IP/Ethernet QoS, with eight classes of service and 16 levels of prioritization to ensure that mission-critical applications always receive sufficient bandwidth. In addition, specialty features are available for handling the particulars of radar, voice push-to-talk (PTT) and VHF voice applications common to Air Traffic Control and governmental networks.

**Key Features**
- Delivers premium QoS over minimum bandwidth capacity for voice services
- Support of analogue and digital voice, full support of QSIG (supplementary services)
- Full range of legacy protocols i.e. HDLC, Async, SDLC, BSC, bit transparent
- Support of IP routing: RIP, OSPF
## TECHNICAL SPECIFICATIONS FAD 9140s

### SYSTEM DETAILS

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universal Serial Port</td>
<td>RS232/V.24, V.35, X.21/V.11, RS449/V.36, RS530</td>
</tr>
<tr>
<td>Ethernet Port</td>
<td>2 x 10/100/1000 BaseT Ethernet ports, RJ-45 connectors</td>
</tr>
<tr>
<td>Expansion Slots</td>
<td>4</td>
</tr>
<tr>
<td>Performance Level</td>
<td>60,000 cells per second (45Mbps)</td>
</tr>
</tbody>
</table>

### NETWORK CONNECTIONS

- Automatic node discovery and rerouting with least cost metric routing
- Automatic load balancing, bandwidth on demand (over leased line), dial back-up, time-of-day connect

### TELEPHONY FEATURES

- **Maximum Telephony Channels**: up to 16 FXS or FXO or E&M
- **Digital Telephony Channels**: up to 3 serial data ports, or 1 serial and 8 T1 or E1 data interfaces
- **Voice Compression Algorithms (5 channels per DSP)**: ACELP-CN (8K/6k with fallback), G.711 (PCM 64 kbit/s), G.726 (ADPCM 16k/24K/32K/40K), G.729 / G.729 a, Group III FAX: 4.8, 7.2, 9.6, 12.0, 14.4k Bit/s, Modem Relay up to 14.4 kBit/s (includes STU III support)

### LAN SUPPORT

- **Ethernet Interfaces**: Ethernet II and IEEE 802.2, 802.3, SNAP
- **Routing**: Standards: IP RIP V1/V2 or Static, OSPF, NAT, Multicast IGMP V1/V2, IPX RIP and SAP, LLC2, Virtual LAN, DHCP Client, BOOTP
- **Bridging**: 802.1D Spanning Tree Protocol (STP), MAC Layer, Transparent Bridging

### SERIAL PORT FEATURES

- **Basic Serial Port**: 1 serial interface, max. speed: 6.144 Mbit/s
- **Expansion Card**: Single serial interface card, max. speed: 2.048 Mbit/s

### PHYSICAL / ENVIRONMENTAL

- **Dimensions (H x W x D)**: 44 mm (1 RU) x 431 mm (19") x 355 mm
- **Typical Weight**: 4.5kg (9.9 lb)
- **Input Power / Power Consumption**: auto-sensing 100-240 VAC, 65W maximum, -48 VDC optional, redundant power supply option
- **Operating Temperature**: 0°C ... 50°C (32°F ... 122°F)
- **Storage Temperature**: -20°C ... 65°C (-4°F ... 149°F)
- **Relative Humidity**: 0% ... 95% non-condensing
- **Operating Altitude**: 4572m (15 000 feet)
  
  Note: Above 3048 meters (10 000 feet) altitude the maximum operating temperature of the unit drops from 45°C to 35°C.

### REGULATORY COMPLIANCE AND AGENCY APPROVAL

- **EMC Emission**: FCC Part 15 (Class A), EN55032:2012, AS/NZS CISPR32, IICES-003
- **EMC Immunity**: EN55024:2010
- **Safety**: EN60950-1:2006 + A11, A1, A12, A2, IEC 60950-1:2005 + A1, A2, UL 60950-1, CSA C22.2 N°60950-1, AS/NZS 60950-1
- **Telecom - Digital**: FCC Part 68 + TIA-968-A/B, IC CS-03 Issue 9 - Part 2 and Part 6, AS/ACIF S016, AS/ACIF S038, TBR 1 + TBR 2, TBR4, TBR 12 + TBR 13, TBR 3
- **Telecom - Analog**: FCC Part 68 + TIA-968-A/B, IC CS-03 Issue 9 - Part 1, AS/ACIF S002, TBR 15 + TBR 17, TBR 21