INSTALLING RELIABILITY

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UNIVERSAL ACCESS DEVICES FAD 9140

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.

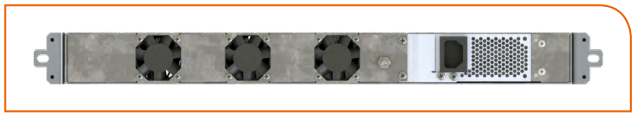
The FAD 9140 is a high speed, low cost, flexible and compact unit that supports 16 analog or 120 digital telephony channels in a multitude of application scenarios. The universal access device provides concentration and switching of packetised voice as well as data from the LAN ports and/or the serial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

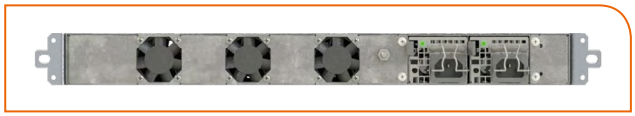
Designed to provide maximum network performance and reliability in low-bandwidth environments, the FAD 9140 reduces network infrastructure costs and simplifies WAN connectivity for mission-critical applications. The FAD 9140 provides a safe migration path from legacy TDM or Frame Relay networks to IP-centric 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 prioritisation 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

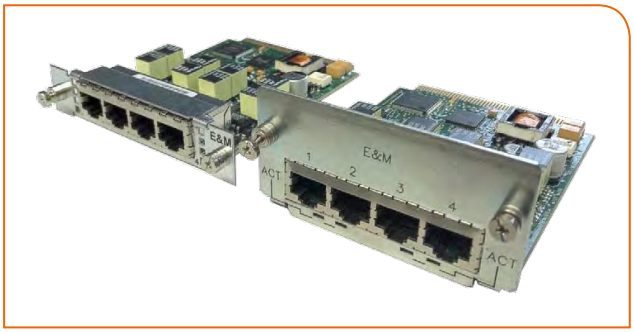
- Delivers premium QoS over minimum bandwidth capacity for voice services
- Support of analogue and digital voice, full support of QSIG (supplementary services)
- Full range of legacy protocols i.e. HDLC, Async, SDLC, BSC, bit transparent
- Support of IP routing: RIP, OSPF



Rear view with standard AC power supply



Rear view with hot-swap redundant AC power supply option



Ultra Low profile and regular interface cards

TECHNICAL SPECIFICATIONS – FAD 9140

SYSTEM DETAILS	
Universal Serial Port	RS232/V.24, V.35, X.21/V.11, RS449/V.36, RS530
Ethernet Port	2 x 10/100/1000 BaseT Ethernet ports, RJ-45 connectors
Expansion Slots	4
Performance Level	60,000 cells per second (45 Mbit/s)

NETWORK CONNECTIONS	
Network Topology	Automatic node discovery and rerouting with least cost metric routing
Node Interconnection	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, 14.4 kbit/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
Quality of Service	8 classes of service, 16 priority weights, association to 802.1p and DiffServ
Bridging	802.1D Spanning Tree Protocol (STP), MAC Layer, Transparent Bridging

SERIAL PORT FEATURES	
Basic Serial Port	1 serial interface, max. speed: 6,144 kbit/s
Expansion Card	Single serial interface card, max. speed: 2,048 kbit/s
Protocols	SNA: SDLC, LLC2 or Frame Relay RFC1490 Legacy Sync: PPP, HDLC, SDLC, X.25 Frame Relay: RFC1490, UNI-DTE, UNI-DCE Asynchronous: ENQ/ACK, XON/XOFF, transparent, CTS/DTR

PHYSICAL/ENVIRONMENTAL	
Dimensions (H x W x D)	44 mm (1 RU) x 431 mm (19“) x 355 mm
Typical Weight	4.5 kg (9.9 lb)
Input Power/ Power Consumption	auto-sensing 100 – 240 V AC, 50/60 Hz, 65 W maximum, -48 V DC 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	4,572 m (15,000 feet) Note: Above 3,048 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, ICES-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

HEADQUARTERS

ND SatCom GmbH
Graf-von-Soden-Strasse
88090 Immenstaad
Germany
PHONE: + 49 7545 939 0
FAX: + 49 7545 939 8780
E-Mail: info@ndsatcom.com

CHINA

ND SatCom (Beijing) Co. Ltd.
PHONE: +86 10 6590 6869/6878

MIDDLE EAST

ND SatCom FZE
PHONE: +971 4886 5012

WEST AFRICA

ND SatCom Senegal
PHONE: +221 77 569 8017

Aug. 2020, Version A.2.