

[PRODUCT SHEET]

Product: Ascom Tactical openAccess® Node R

Platform: Ascom openAccess®

Segment: Defense

Division: Security Communication



ASCOM TACTICAL openACCESS® NODE R MOBILE VOICE AND DATA SWITCH FOR RADIO INTEGRATION

Ascom openAccess® Nodes are integrated voice and data switches that provide the essential foundation for today's mission critical communications infrastructures. They are used by national and international military forces, peace keeping troops and crisis management teams.

Ascom openAccess® Nodes' connectivity and operational features provide secure and scalable functionality for voice, data and imagery applications demanded in the combat arena and homeland security relations.

Built on proven hardware and software technology, Ascom compact network nodes are compliant with global industry and governmental standards for vehicle and military grade electronics.

In alignment with NATO TACOMS Post 2000 architecture, Ascom Tactical openAccess® Node R serves the role as voice and data radio access point in mobile area sub-systems. Over legacy radio networks, it provides interoperable communication access between field devices and separated ad-hoc mobile headquarters. In mission critical operations this vital communication link assures information flow at all levels from command headquarters to the troops.

Even with bandwidth limitations and restricted channel availability, Ascom Tactical openAccess® Node R truly extends the range of the core IP network. It links into virtual LANs using tactical radio channels; but is also equipped with multiple interfaces that allow LOS (Line-of-sight), meshed WLAN and universal Ethernet connections. This capability allows fixed line communication equipment and field radio devices to exchange information that contribute to situational awareness and operational effectiveness.

Ascom Tactical openAccess® Node R is highly reliable and adaptable to a wide variety of extreme ad-hoc deployments. The watertight ultra rugged enclosure is hermetically sealed to withstand severe humidity and dust exposure as well as extreme temperatures. Its form-factor is optimally designed for space/weight-constrained military vehicles and ground mobile deployments. It is corrosion resistant; shock/vibration protected and can be easily mounted in existing PR4G amplifier racks.

Technical Specification

Networking		Shock	MIL-STD-810F, method 516.5, procedure I, 30g 11 ms sawtooth, mounted in swing frame
Network topology	Support for meshed network topologies.	EMC	
Topology changes	Dynamic routing adaptation in response to network topology changes.	Emissions	MIL-STD-461E (CE102, 10kHz – 10MHz, figure CE102-1 on 24 VDC; RE102, 10 kHz – 1GHz, figure RE102-4 / army)
Routing	Supports both unicast as well as multicast routing.	Immunity	MIL-STD-461E (CS114: figure CS114-1 on all cables, 10kHz-1MHz curve #3, 1MHz-30MHz curve #4, 30MHz-200MHz curve #4; RS103: 30MHz – 1GHz 20V/m, 30MHz-18GHz 50 V/m). ESD air discharge with 8kV, contact discharge with 4kV according to IEC 61000-4-2. Burst 1 kV according to IEC 61000-4-4 coupling gripper on the cable. Burst 1 kV according to IEC 61000-4-4 direct coupling on 24V line. Surge on 24VDC: according to EN 61000-6-2 (Immunity, Industry, Table 3 dc power port); line-to-earth +/- 0.5kV 1.2 / 50 us (8/20), 12 Ohm; line-to-line: +/- 0.5kV 1.2 / 50 us (8/20), 2 Ohm.
Routing path selection	Best path selection across different network domains (i.e. tactical radio network, LAN, military backbone).		
Data Features			
IP	IPv4	Mechanical	
DNS	Built-in Domain Name Server for IP-address-to-name and name-to-IP-address translation.	Size (LxHxD)/mm	279x105x215 (without connectors)
DHCP	Built-in Dynamic Host Configuration Protocol server for IP address assignment.	Weight	6kg
Radio Features		Connectors	Circular interface and power supply plugs, mounted on front side
Tactical radio network topology	Optimised network topology management for tactical radio networks. No limitation on the type of radio network topology.	Power	
Radio Connection	4x VHF / HF tactical radio (e.g. PR4G transparent data interface and remote control interface supported)	Input voltage	24VDC (18-33VDC)
ARQ	Per-link ARQ across radio networks	Power consumption	20W nominal, 30W maximal
Management Features		Power autonomy	An internal lithium-polymer storage battery 24V / 1.5Ah provides power for 5 minutes.
Management	Remote configuration and monitoring based on SNMP and Network Management Application (NMA).	Available Interfaces	
Configuration storage	Storage of multiple configuration profiles. Configuration changes are possible without reset or reboot. Configurations can be backed up locally or remotely.	Remote relay	Relay I/O control over IP
Update management	Supports remote software updates.	Serial lines	6 x asynchronous port 16C550 compatible 4 x synchronous port
Environmental Conditions		Switched Ethernet	2 x 10Base-T / 100Base-TX
Temperature	Operation: -20..+55°C, MIL-STD-810F, 502.4, procedure II, MIL-STD-810F, 501.4, procedure II Storage: -30..+60°C, MIL-STD-810F, 502.4, procedure I, MIL-STD-810F, 501.4, procedure I	Service interface	1xUSB 2.0, 1xRS-232
Cooling	Cooling possible without external air exchange If required, an internal fan activates the airflow and optimises the cooling.	User Interfaces	
Humidity	MIL-STD-810F, 507.3, proc. I, cycle 3 (95%RH) with closed connector shields.	Display	2-digit process display
Waterproof	MIL-STD-810F, 506.3, proc. II (dripping-water) with closed connector shields.	Status	PC (HD and LAN activity)
Vibrations	MIL-STD-810F, method 514.4-4 AllI modified (depending on axis: 1...6.5g RMS, random on random 5 - 500Hz, 8Min/phase, total 40Min/axis, mounted in swing frame)	Operational displays	radio control, supply power, fans, temperature, storage battery
		Switches / keys	On/Off Reset Test

Technical Specification

Base Board		Internal Expansion Units	
CPU	Low Power Pentium-M 738, 1.4 GHz, 2MB L2 cache, 64bit data bus	Slot type	PC/104-Plus
Chip set	Intel 855GME	Number of slots	2 (1 free, with 22 pin MIL connector equipped)
Front side bus	400MHz	4xSynch PC104	4xsynchronous ports per unit for up to 4 radios
BIOS	1MB Flash EEPROM	Maintenance	
RAM	1 GByte	Maintenance interval	4 years (change of lithium storage battery)
Persistent storage	4 GByte DOM (Disk on module)		
Internal fans	1x, monitored, temperature controlled		

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