

[PRODUCT SHEET]

Product:	Ascom Tactical openAccess® Node T223 and Base Product Software BPS R3 and later
Platform:	Ascom openAccess®
Segment:	Defense
Division:	Security Communication



ASCOM TACTICAL openACCESS® NODE T223 MOBILE VOICE AND DATA SWITCH FOR TACTICAL COMMUNICATION SYSTEMS

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

Ascom openAccess® Node's 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.

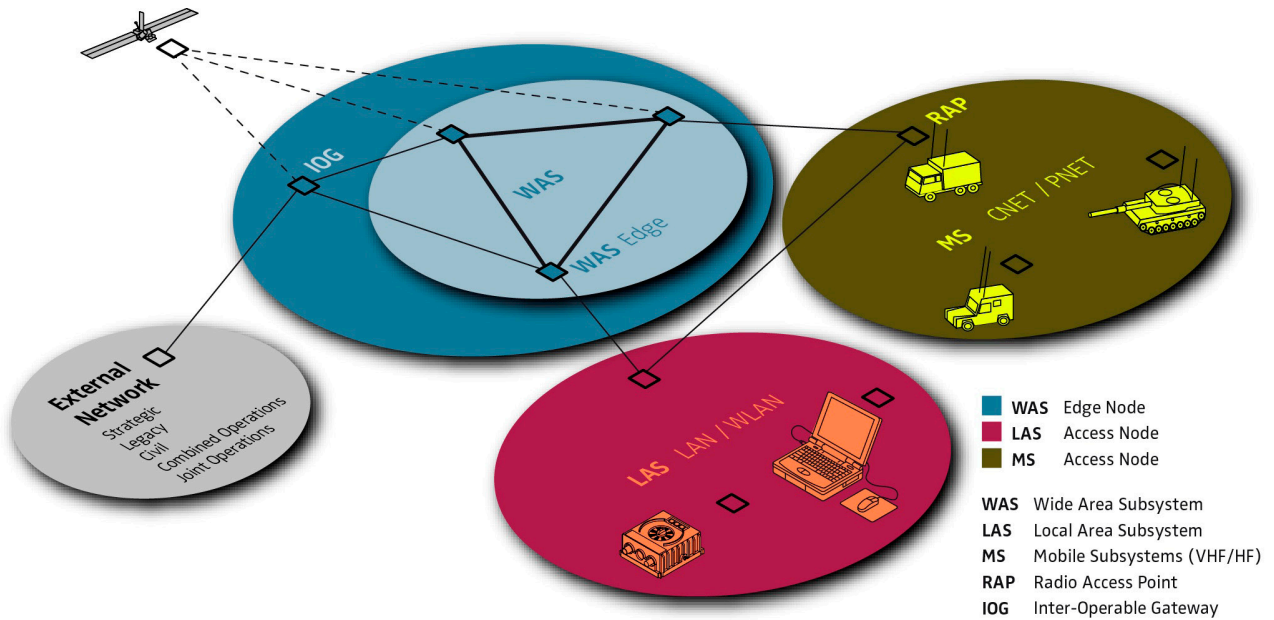
In alignment with STANAG 4637 (TACOMS) architecture, Ascom Tactical openAccess® Node T223 (TAN T223) provides interoperable access functionality towards mobile headquarter communication infrastructures. In mission critical operations it assures information flow at all levels from command headquarters to the troops.

Ascom Tactical openAccess® Node T223 connects local area subsystems with headquarter offices, other detached command and control facilities and isolated mobile area sub-systems. By creating an extended all-IP network, fixed line communication equipment and field radio devices are able to exchange information enhancing situational awareness.

Ascom Tactical openAccess® Node T223 is a ruggedized military-grade communication network access node with integrated routing functionality. With low power consumption it is mechanically designed for a large variety of permanent and ad-hoc deployments, mainly for extreme field conditions. The watertight, ruggedized enclosure is hermetically sealed to withstand severe humidity and dust exposure as well as extreme temperatures. It is corrosion and shock/vibration resistant.

Ascom Tactical openAccess® Node T223 is optimized for connecting heterogeneous networks including copper/fiber Ethernet, E1/ISDN, 2-wire DSL, tactical radio, LOS (Line-of-sight), and satellite infrastructure. Multiple QoS routing priorities and security levels are supported for secure and efficient traffic management.

Ascom Tactical openAccess® Node T223



Ascom Tactical openAccess® Node T223 is a ruggedized, interoperable voice and data network access element for tactical communication systems. It provides connectivity between permanent and detached ad-hoc command and control facilities and mobile area sub-systems, while allowing links to external public, strategic and legacy networks.

Technical Specification	
Network applications	
Tactical All-IP Communication Domain	Inter-connects heterogeneous tactical networks, wired and wireless, IP and non-IP, into one unified All-IP communication domain. This enables a transparent and robust IP network for tactical environments, where users can communicate end-to-end without technology boundaries.
Multi-Protocol Routing	Supports multiple IP routing protocols, and intelligently arbitrates between them.
Heterogeneous Networking	Connects to multiple tactical network types like Ethernet, E1, SHDSL, EUROCOM, CNR, or WLAN.
Mesh Topology	Can be used as autonomous mesh network node.
High-Performance Ethernet Switching	Includes non-blocking, full Gbps line rate Ethernet switch (optical and copper).
Site-to-Site VPN	Standards compliant IPsec VPN tunnels supporting multiple authentication and encryption schemes can be established between TAN T nodes.
Multi-Protocol Voice Switch (PBX)	Multiple VoIP and circuit switched voice technologies (SIP, IAX, ISDN, Eurocom, Analog) are supported by the built-in PBX.
VoIP Gateway	The built-in PBX can convert between all supported voice technologies, allowing the TAN T to be used as VoIP gateway, e.g. ISDN-to-SIP, or Analog-to-SIP.
Voice Trunking	Multiple TAN T nodes can build a fully interconnected voice network. Flexible number translation per voice trunk allows for integration into different numbering domains.
Integration of HF/VHF/LOS Radios	Routing algorithms optimized for low bandwidth, high latency radio networks are available and allow to route traffic over wireless radio networks.
Network Services	TAN T provides network services to locally attached LANs, as DHCP, DNS, and NTP services.
DiffServ Traffic Shaping	The built-in QoS engine allows for shaping traffic with prioritization based on DiffServ or 802.1D classification.
Data features	
Switching / VLAN	TAN T provides non-blocking, line rate switching for all LAN Ethernet ports (copper and optical) including support for 802.1Q VLAN.
IP Routing	TAN T routing engine supports static, OSPF, BGP, PIM-SM, and IGMP routing protocols. Specialized routing algorithms are available for mesh networking and integration of radio networks. TAN T supports filtering and redistribution of routes.
WLAN Access Point	TAN T223 includes 802.11 a/b/g compliant wireless LAN access point supporting WPA2 secured wireless access.
QoS	DiffServ standards compliant IP/Ethernet traffic conditioning, based on IP DSCP or Ethernet 802.1p fields. Hardware traffic shaper works at gbit/s line rate.
DNS	RFC compliant DNS server supporting dynamic DNS in combination with included DHCP server. Upstream DNS server (forwarders) and caching of DNS queries are supported.
DHCP	Full featured standards compliant DHCP server supporting multiple IP subnets.
NTP	NTP server and client functionality in order to provide accurate timing information for connected devices. Time sources for NTP server include GPS, remote NTP servers, or local clock.
Standards, Protocols	IEEE 802.3 Ethernet (Cu/FO), E1 G.703/704, SHDSL, EUROCOM Data (Ascom proprietary), 802.11 a/b/g
Voice features	
PBX	IP PBX supporting analog (FXO, FXS), digital (ISDN, EUROCOM), and VoIP (SIP, H.323, IAX) interfaces. Technology neutral voice switching core combined with voice application platform for fast development of customer specific voice features. Support for direct inward and outward dial (DID/DOD) with caller-ID.
Voice Gateway	Full voice gateway functionality including support for DTMF and caller-ID for all available analog, digital, and VoIP interfaces.
Number Translation	Number translation (NT) applied on called and calling numbers for incoming and outgoing calls. PBX includes multiple NT hooks in call routing path, as e.g. one NT per voice trunk. TAN T can be easily integrated into existing dialing plans.
Voice Trunking	IAX trunks allow to setup bandwidth optimized VoIP channel bundles between TAN T nodes. ISDN, Eurocom, SIP, and H.323 trunks are available for connecting TAN T to existing telephony infrastructure, including PSTN.
Automatic Number Resolution	Number flood searching allows for deploying flat dialplans.
Voice Applications	Conferencing, hotline, MLPP, alternate routing. Fast development of customer specific applications.
Standards, Protocols, Codecs	FXS, FXO, ISDN (Euro-ISDN, QSIG), EUROCOM (a,b,c,STANAG), SIP, H.323 base, IAX, G.711, G.723, GSM
Security	
IPsec VPN	Encrypted site-to-site IPsec VPNs supporting multiple authentication methods.
Firewall/NAT	Firewall supporting filtering rules with access to full IP packet headers. Stateless and stateful filtering. Network address translation (NAT) for private LANs.
Key Store	Import and management of PKI certificates and CRLs.
System Management	
Management GUI	Web GUI for configuring and monitoring TAN T, remotely through IP network or locally through laptop/PC connected to service Ethernet port. GUI framework allows for fast development of customer specific GUIs, e.g. mission specific configuration wizards.
Management Web Services Interface	XML-RPC compliant web services interface for configuring and monitoring TAN T nodes. Use cases include integration of TAN T into existing mission planning tools, or network management solutions. This interface is service-oriented architecture (SOA) compliant.
Configuration Profiles	System and feature level configuration profiles can be exported, imported, and activated without rebooting TAN T.
SNMP	SNMP v1, v2c, and v3 compliant agent supports remote monitoring of TAN T. Following MIBs are available: MIB-II (RFC 1213 and successors), Host Resources (RFCs 1514, 2790), SNMPv3 (RFCs 2571-5, 3411-3418).
Software Maintenance	Remote and local software updates are supported.
Built-In Self-Testing (BIT)	TAN T hardware and software functions are tested on boot and on demand. Test reports allow for quick troubleshooting.
Local/Remote Logging	Standard UDP based syslog for remote and local logging of system events.

Technical Specification	
Environmental conditions	
Temperature	-40..+55°C operation -40..+71°C storage MIL-STD-810G, 502.5 Proc I and II, 501.5 Proc I and II
Relative Humidity	95% RH MIL-STD-810G, method 507.5 Proc II (aggravated), Fig. 507.5-7, 10 cycles @ 55°C
Waterproof	MIL-STD-810G, method 506.5, Proc I
Vibration	MIL-STD-810G, method 514.6, cat. 5 truck/trailer – loose cargo, figure 514.6C-4. MIL-STD-810G, method 514.6, cat. 20 ground mobile, figure 514.6C-3 and table 514.6C-VI; figure 514.6C-2 and table 514.6C-IV (Placement of unit in an anti-vibration frame)
Transit drop	MIL-STD-810G, method 516.6, Proc IV (transit drop), in transport case
Shock	MIL-STD-810G, method 516.6, Proc I, with unit placed in an anti-vibration frame
EMC	
Emissions	MIL-STD-461F <ul style="list-style-type: none"> CE102, figure CE102-1 RE102, 2 MHz – 18 GHz, figure RE102-4 Ground (curve Army)
Immunity	MIL-STD-461F <ul style="list-style-type: none"> RS101 (radiated susceptibility, magnetic field, 30 Hz to 100 kHz) figure RS101-1. RS103 (radiated susceptibility, electric field, 50 V/m 2 MHz – 18 GHz CS101 (conducted susceptibility, power leads, 30 Hz to 150 kHz, figures CS101-1 curve 2 (nominal source voltage =<28 Vdc), CS101-2), CS114 (conducted susceptibility, bulk cable injection, 10 kHz to 200 MHz.), Figure CS114-1 on all cables (Table VI: 10 kHz-2 MHz. curve #2, 2 MHz-30 MHz. curve #2, 30 MHz-200 MHz curve #2) CS115 (Conducted Susceptibility, Bulk Cable Injection, Impulse Excitation) Figure CS115-1 CS116 (Conducted Susceptibility, Damped Sinusoidal Transients, Cables and Power Leads, 10 kHz to 100 MHz, figure CS116-2, IMax = 10 A)
Mechanical	
Watertight and hermetically sealed housing, carry handles and 19" mounting adapters, hardened for military use	
Size (LxHxD)	380x132x268 mm Depth including connectors and caps: 308 mm
Weight	10 kg
Cooling	Cooling functions without air exchange between inside and outside the housing. If required, an internal fan forces the airflow.
Available interfaces	
TAN T223	
Switched electrical Ethernet	Up to 7 x 10/100/1000Base-TX Up to 6 x PoE
Switched Optical Ethernet	Up to 2 x 1000Base-FX single mode, 5km
Service	1 x 10/100Base-TX, 1 x USB 2.0, 1 x VGA
AT	Up to 16 x a/b FXS or FXO
E1	Up to 6 x E1
SHDSL	Up to 3 x G.SHDSL (2-wire)
EUROCOM	Up to 2 x EUROCOM EES / D/1: A (10 pin) or B or C, on 1 connector
Voice Radio	Up to 2 x Analog Voice Radio Terminal (6 wire; available July 2012)
USB	Up to 4 x USB 2.0
WLAN Access Point	802.11 a/b/g with up to 2 x HF interface
Serial & Relay	1 x RS232 asynch 1 x Relay Out, 2 x Relay In
Power	
Input voltage	18-60VDC or 110VAC/230VAC with external power supply
Input power	85 W typical, 105 W peak (preliminary)
Notes	
<ul style="list-style-type: none"> Other configurations on request External fan, 19" mounting kit, a/b patch panel available on request Part of the features listed are available as options only. 	

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