WAAV
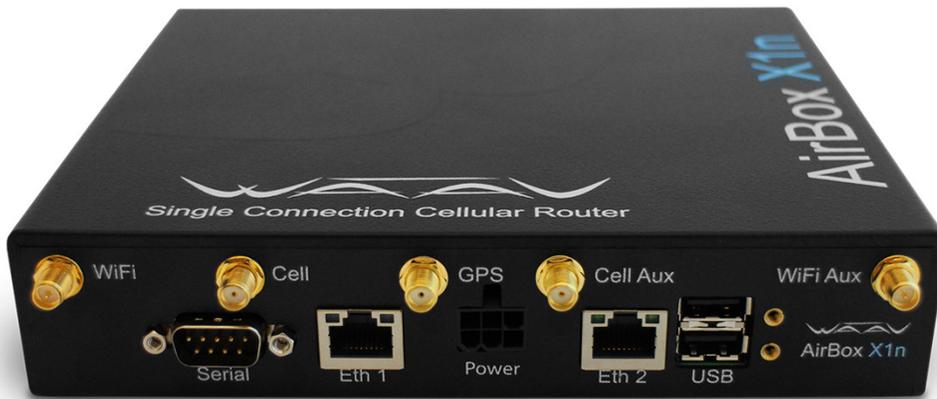## Designed To Move

AirBox X1n Cellular Router
Advanced Monitoring & Control | Rugged & Reliable | Flexible & Secure

Single Connection Cellular Router

WiFi | Cell | GPS | Cell Aux | WiFi Aux
Serial | Eth 1 | Power | Eth 2 | USB
AirBox X1n

Mobile Network Gateway

The AirBox X1n is an enterprise-class router providing broadband Internet connectivity over a cellular network. Designed to serve as a remote network gateway, the AirBox connects IP-based network devices such as laptops, video cameras, DVRs, and M2M hardware. Integrated dual-band WiFi can be configured as a private network or hotspot deployment, and multiple Ethernet ports enable both WAN and LAN cabled connections. The AirBox provides superior in-vehicle connectivity for fleet applications, excellent bandwidth for wired failover connections, or Internet connectivity in remote locations.

The exceptional functionality and flexibility of the AirBox is complemented by maximum connectivity and device reliability. The patented AirBox X1n cellular router includes the WAAV OS which continuously monitors the cellular connection to ensure reliability, and it intelligently handles connection failover, providing the finest cellular broadband experience available.

Reliability extends beyond the multi-level system monitoring, health checks, and modem handling functions to the physical hardware design and components. The AirBox X1n uses embedded industrial-class MiniPCIe hardware to ensure operability in the harshest application environments. External antennas allow installations in hardened locations and enclosures, and the rugged housing protects critical components.

In addition to offering great connectivity and reliability, the AirBox X1n can run customer-specific applications, saving the cost, space, integration, powering, and support of multiple devices.

Remote management functions enable over-the-air firmware upgrades, configuration changes, and real-time access to router performance data. The AirBox can be delivered pre-configured for your network, providing plug and play installation and provisioning.

FEATURES

Cellular connection
Reliable network connection, cross-carrier capability, seamless failover of modem and WAN interfaces.

Mobile Gateway
Onboard applications for in-vehicle or remote system integration.

Expandability
Multiple USB and serial ports available for remote monitoring and control.

Industrial environments
Rugged, compact design for mobile and M2M connectivity.

Remote management
WAAV's Control Room web-based suite provides remote access to router performance logs and configuration tools.

GPS
Real-time location plus logging for fleet tracking and asset management.

WiFi enabled hotspot
Custom splash page, dynamic bandwidth allocation, Quality of Service, content filtering.

APPLICATIONS

• Transit: bus, rail, trucking & freight, courier, limo, taxi, ferry

• Public safety: police, homeland security, traffic management, highway, fire and emergency response

• Work sites: remote networking, rapid deployment, WiFi access, field insurance claims

• Video security: video with real-time view, integrates with DVR option, alarm monitoring

• Energy: remote monitoring & control, PV, HVAC, physical security

• Failover: redundancy for business continuity, multiple configurations

• Retail: POS, ATMs, digital signage, lottery, vending, automated retail kiosks

• Healthcare: remote patient monitoring, in-home care, telemedicine, and eHealth

Technical Specifications - AirBox X1n

Technical specifications

Connections	4G LTE Cellular Connection, with automatic fallback to 3G Option for session-persistent failover / backup solution
Reliability enhancements	WAAV OS Cellular Dead-link Detection with Modem Health Checks Auto-recover firmware with watchdog timers
Router functions	Port Forwarding NAT (Network Address Translation) DHCP Server
Firewall / Security	Port Filtering Stateful packet inspection
Other features	VPN Pass-through Dynamic DNS Remote support and remote firmware updates Connected Client Listings
Transit options	Proportional Bandwidth QoS Splash Page / Landing Page / Public Status Page Content Filtering

Cellular networks

LTE	(AT&T, Verizon, International carriers)
	4G AT&T Freq Band: LTE 700 B17/AWS, with fallback to HSPA+ 4G Verizon Freq Band: LTE 700 B13, with fallback to CDMA 4G Int'l Freq Band: 800/900/1800/2100/2600 with fallback to HSPA+
	100Mbps Max Download (3-5Mbps Avg) 50Mbps Max Upload (1-2Mbps Avg)
	2x MIMO antennas
CDMA	(Sprint, Verizon, etc.)
	Frequency Bands: 800/1900 MHz
	EVDO Rev A (3G): Download: 500-2200 kbps Avg (3.1Mbps Peak); Upload: 50-1000 kbps Avg (1.8 Mbps Peak); fallback to 1xRTT
	1xRTT (2G): Download: 80-150 kbps Avg (153 kbps Peak); Upload: 80-150 kbps Avg (153 Kbps Peak)
GSM	(AT&T, etc.)
	Frequency: 850/900/1800/1900 MHz
	21Mbps HSPA+ (4G): Download: 1.5-5 Mbps Avg (21 Mbps Peak); Upload: 500-2000 kbps Avg (5.76 Mbps Peak); fallback to 7.2 & EDG
	7.2Mbps HSPA (3G): Download: 700-1800 kbps Avg (7.2 Mbps Peak); Upload: 350-800 kbps Avg (1.8 Mbps Peak); fallback to EDGE
	EDGE (2G): Download: 100-250 kbps Avg (384 kbps Peak); Upload: 100-200 Kbps Avg (384 kps Peak)

WiFi

Frequency	2400-2483.5 / 5150-5350 / 5470-5850 MHz	**Diversity**	2T2R dual-band MIMO
Data Rates (in Mbps)	802.11n (40MHz): up to 300Mbps 802.11n (20MHz): up to 144Mbps 802.11a/g: 54, 48, 36, 24, 18, 12, 9, 6 802.11b: 11, 5.5, 2, 1	**Security**	64/128-bit WEP Encryption WPA (TKIP with IEEE802.1x) WPA2 (AES with IEEE802.1x) WPA Mixed 802.1x authentication

Interfaces

Ethernet	(2) RJ45 Ethernet ports (independent MACs)
Internal MiniPCI	(1) Dual band 802.11n 2x2 MIMO WiFi (2.4/5.7GHz) Option for private networks
Internal MiniPCIe	(1) WAN slot for 3G/4G LTE embedded modules
RF Connectors	(2) SMA Female for 3G/4G cellular antennas (2) RP-SMA Male for WiFi / expansion module (1) SMA Female for GPS antenna with powered bias for LNA
USB Ports	(2) External USB 2.0 ports with locking connector (1) Internal USB 2.0 connector
SIM Card Slots	(1) Internal SIM slot (1) External SIM slot Enables multi-network support
Serial / GPS / Ports	(1) Full-signaling RS-232 serial port Configurable for local GPS relay (1) Internal RS-232 UART (1) Internal I2C connection
Indicators	(3) Status LEDs

Physical characteristics

Size & Mounting	Dimensions: 18.0 x 15.7 x 3.8 cm (7.1 x 6.2 x 1.5 in) Weight: 0.4Kg (0.9lb) Fanless industrial case with mounting brackets
Temperature	AirBox operating temperature*: -20 to 70 C * Limited by LTE modem module to: -20 to 60 deg C * Extended -40 to 85 C temperature modules available
Power	6-pin Molex connector: 6-20Volt input, 18 W max

About WAAV

WAAV's unrivaled network communication solutions include innovative products, applications, and services focused on information delivery over cellular networks. By making fluctuating and inconsistent wireless network connections reliable and stable, WAAV enables remote and mobile solutions that can be trusted.

Since 2004, WAAV (pronounced "wave") has continuously led the industry in developing enterprise-class solutions for connectivity. WAAV developed the first 3G mobile cellular router, the first cellular router with integrated GPS for remote tracking, and the first multiple-connection cellular router for broader bandwidths, increased coverage area, and connectivity redundancy. WAAV designs, manufactures, and markets the patented AirBox line of rugged cellular routers to provide the most reliable broadband connectivity. WAAV continues to develop its product line to utilize this connectivity for a growing number of applications while reducing costs and improving performance, reliability, and functionality.

WAAV's product portfolio covers enterprise, government, original equipment manufacturer (OEM), and machine to machine (M2M) markets. Engineering services are available for custom integration and specific industry solutions. WAAV solutions connect your workforce, applications, partners, and customers. World-class reliability, performance, and support are standard with every WAAV product.

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