



## **COMMPAK Broadband**

2.4 GHz, 4.9 GHz, 5.8 GHz

Up to 54 Mbps (802.11 a/g)

Single, Dual and Integrated Radios

**Experience the ENCOM difference!**





## Customers across the Globe trust their wireless business needs with ENCOM.

**Why??** ENCOM's products create rich intelligent communication systems that are agile, flexible, dependable, and secure. In the end, ENCOM's solutions provide the utmost functionality and quality accompanied with maximum return on investment (ROI).

### Proven dependability

ENCOM has an unmatched track record in deploying industry leading wireless solutions for over 25 years. In addition to uncompromised personal customer service, ENCOM's products incorporate built-in diagnostic tools, meet NEMA, FCC, Industry Canada and CE standards and unequalled warranty programs. In the end, ENCOM delivers on the expected results and business requirements of its valued customers.

### Cost savings that don't compromise quality

On average, wireless networks are 90% more cost effective compared to wired solutions\*. While eliminating the need for leased telephone lines or outrageous operational and capital costs for trenching and maintenance of fibre and copper networks, they are easier and faster -- to install, reconfigure, upgrade and expand. Field-proven, trusted and environmentally hardened, ENCOM's wireless products provide tremendous value while delivering uncompromised quality.

### Industrial-grade performance

ENCOM's wireless broadband products are built to perform in the most challenging environments with industrial grade enclosures that are weatherproof. When you combine this with powerful 600 milliwatt transmitters operational ranges up to 60 miles can be achieved. Whether your needs depict harsh outdoor conditions, dense urban settings or extreme remote locations, ENCOM has you covered.

### Rock-solid security

Wireless security is critical to network reliability and has advanced to equal wired security over the past ten years. All ENCOM Wireless broadband products are equipped with the most advanced and comprehensive suite of security features available, including WPA2, WPA, WEP, MAC and radius server authentication.

### Future-proof and flexible

ENCOM's wireless broadband products are engineered and designed to respond to your current and future business needs. Grow, modify and upgrade your network with minimal time and costs, thus maximizing ROI. Selection is optimized allowing you to decide between licensed and non-licensed frequencies including 2.4, 4.9, 5.2 and 5.8 GHz. Furthermore, each broadband product can function as a master, remote, repeater or mesh node making it easy to create networks compatible with your business needs and the changing demands of your customers and end-users.

### Key Features:

- Options between non-licensed frequencies at 2.4, 4.9, and 5.8 GHz
- Up to 54 Mbps (802.11 a/g)
- Each radio can perform as master, remote or repeater
- Operational in point-to-point, point-to-multipoint and multipoint-to-multipoint configurations
- 600 milliwatt transmitter allows for range of up to 60 miles
- Delivers consistent low latency communications
- Power over Ethernet
- STRATOS configuration, diagnostic and management utility application
- Extensive suite of security features
- 3 year warranty

### Key Benefits:

- Over 25 years of broad industry experience
- Proactive and adaptable solutions for a diverse range of applications
- Unmatched software management tools
- Scalable and future proof technology platforms
- Personalized customer support programs and corporate culture
- Unequalled warranty and support programs
- Defined and measurable ROI

\*According to recent U.S. Department of Transport data



### Single Radio (Non-Integrated)

- N female connector for external antenna: panel, sectoral or omni



### Dual Radio (Non-Integrated)

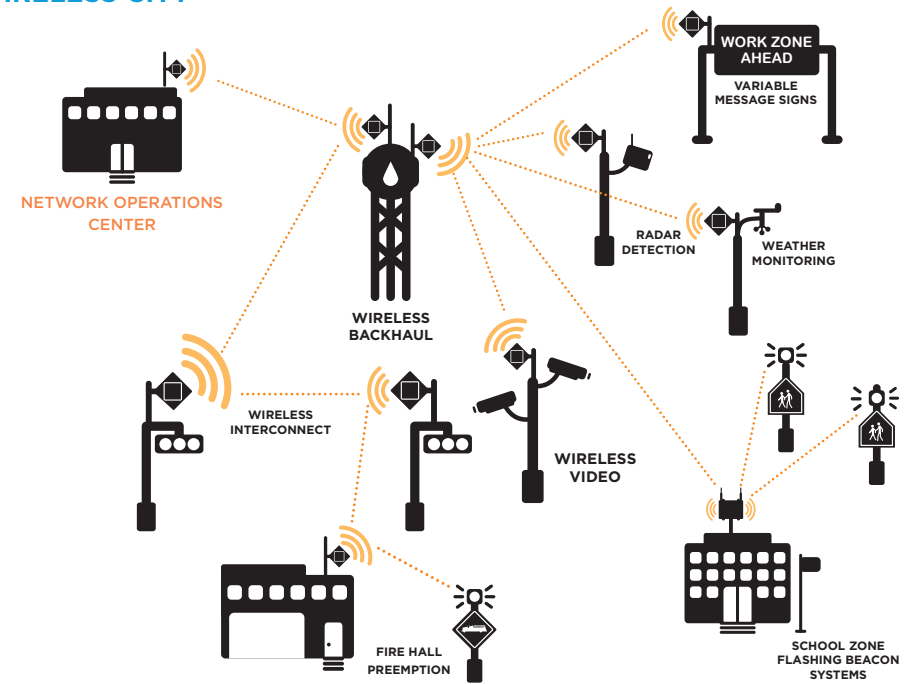
- Reduces cabling requirements by minimizing ethernet ports
- 2 N female connectors for external antennas
- Frequencies can be mixed and matched between 2 radio cards
- Limited to zero reduction in bandwidth when used as repeater



### Integrated Unit

- Equipped with flat-panel antenna with directional 23 dBi gain
- No RF cables or connectors to weatherproof
- Simple and rapid installation
- Aesthetically non-intrusive
- Dual Integrated units contain one built-in panel antenna and an N female connector for external antenna
- Ten degree beamwidth on antenna
- Low wind loading

## Solution Example: WIRELESS CITY



## Solution Portfolio:

### Intelligent Transportation Systems

- Wireless Controller Interconnect
- Vehicle Detection Systems
- Variable Message Signs

### Water/Waste Water Management

- Pump/Lift Stations
- Reservoir Monitoring
- Remote Valve Controls

### Electrical Utilities

- Automated Meter Reading (AMR)
- Automatic Circuit Reclosures (ACR)
- Smart Grid Support
- Fault Monitoring

### Industrial SCADA Networks

- Pipelines
- Oil and Gas
- Mining

### Private Networks

- LAN & WAN Extensions
- Business Continuity Planning
- Disaster Recovery Planning
- Mobile Workforce
- Hotspot Enablement



### About ENCOM:

ENCOM, a Global Wireless Solutions Provider, creates field proven, cost-effective wireless data solutions for municipal and industrial clients, with applications involving:

- Intelligent Transportation Systems
- Public Safety Communications
- Municipal Corporate Security and IT Networks
- Water and Waste Water Management
- Electrical Utilities
- Oil and Gas

### Who relies on ENCOM?

- Municipal Governments
- Corporate IT Departments
- Departments of Homeland Security
- Departments of Transportation
- Emergency First Responders
- Mobile Workforces
- Private Networks

### Customer Testimonials:

- City of Aurora, Colorado
- City of Burnaby, British Columbia
- City of Calgary, Alberta
- City of Greeley, Colorado
- Los Alamos County, New Mexico
- Macomb County, Michigan
- Missouri DOT
- North Carolina DOT
- City of San Jose, CA
- City of Tampa, Florida
- TxDOT



© ENCOM Wireless

WIRELESS PERFORMANCE			
<b>Receive signal</b>	<b>2.4</b>	1 Mbps - 97 dBm 2 Mbps - 96 dBm 5.5 Mbps - 95 dBm 6 Mbps - 94 dBm 9 Mbps - 93 dBm 11 Mbps - 92 dBm	12 Mbps - 91 dBm 18 Mbps - 90 dBm 24 Mbps - 86 dBm 36 Mbps - 83 dBm 48 Mbps - 77 dBm 54 Mbps - 74 dBm
	<b>4.9 &amp; 5.8</b>	6 Mbps - 94 dBm 9 Mbps - 93 dBm 12 Mbps - 91 dBm 18 Mbps - 90 dBm	24 Mbps - 86 dBm 36 Mbps - 83 dBm 48 Mbps - 77 dBm 54 Mbps - 74 dBm
<b>Transmit power</b>	Up to 28dBm		
<b>Range</b>	Up to 60 miles		
<b>Modulation</b>	OFDM and DSS		
<b>Wireless interface</b>	802.11 a/b/g or E-Max propriety protocol (enhanced security), dynamic frequency selection, 5MHz, 10 MHz, 20 MHz and 40 MHz channels		
<b>SYSTEM MANAGEMENT</b>	<ul style="list-style-type: none"> <li>• ENCOM STRATOS</li> <li>• Telnet</li> <li>• SSH</li> <li>• SNMP</li> </ul>		
PHYSICAL SPECIFICATIONS			
<b>Enclosure</b>	<b>Pole/wall mount unit</b>	<b>Integrated antenna unit</b>	
	<ul style="list-style-type: none"> <li>• Die-cast aluminum</li> <li>• Dimensions: 8.5" x 7"x2"</li> <li>• Weight: 3 lbs</li> <li>• IP67 Weatherproof rating</li> </ul>	<ul style="list-style-type: none"> <li>• UV stabilized plastic and die-cast aluminum</li> <li>• Dimensions: 13"x13"x3"</li> <li>• Weight: 5 lbs</li> <li>• IP67 Weatherproof rating</li> </ul>	
<b>Environmental</b>	Operating temperature range -30°C to +60°C (storage temperature -40°C to +80°C) Humidity (non-condensing): 5% to 95%		
<b>Antenna</b>	Units come with either an integrated, flat-panel antenna with 23dBi gain, or an N-female connector to connect to an external antenna		

### Order Information

PART NUMBERS					
Frequency	Wireless unit	With integrated antenna	Panel Antenna	Sectoral Antenna	Omni Antenna
2.4 GHz	COMMPAK BB24	COMMPAKBB24 INT	AN-215K (10°, 20 dBd gain)	Not applicable	AN-199 (360°, 7.5 dBd gain)
4.9 GHz	COMMPAK BB49	COMMPAK BB49 INT	AN-196 (10°, 23 dBd gain)	AN-206 (90°, 13 dB gain)	Not applicable
5.8 GHz	COMMPAK BB58	COMMPAK BB58 INT	AN-196 (10°, 23 dBd gain)	AN-206 (90°, 13 dB gain)	AN-199 (360°, 7.5 dBd gain)
2.4 / 5.8 GHz	COMMPAK BB24/58	COMMPAK BB24/58 INT	See above	See above	See above
5.8 / 5.8 GHz	COMMPAK BB58/58	COMMPAK BB58/58 INT	See above	See above	See above
4.9 / 5.8 GHz	COMMPAK BB49/58	COMMPAK BB49/58 INT	See above	See above	See above

Please call for other frequency options.  
\*300 Mbps: call ENCOM  
\*Mesh: call ENCOM

SPECIFICATIONS							
<b>Security (Encryption)</b>	<ul style="list-style-type: none"> <li>• 802.11i with AES-CCM Encryption</li> <li>• 802.1x</li> <li>• 128 bit WEP</li> <li>• MAC/Radius Server Authentication</li> <li>• EAP-TLS/EAP-passthrough</li> </ul>						
<b>Networking Features</b>	<ul style="list-style-type: none"> <li>• STP/RSTP (802.1s/802.1w)</li> <li>• QOS (802.1p, 802.11e)</li> <li>• VLAN (802.1q)</li> <li>• DFS and TPC (802.11h)</li> <li>• Ethernet Bridging (802.1d)</li> <li>• DHCP (Server/Client)</li> <li>• NTP</li> <li>• Stateful Firewall</li> <li>• VPN Compatible</li> <li>• SNMP</li> <li>• Syslog</li> </ul>						
<b>Interface</b>	<ul style="list-style-type: none"> <li>• Industrial Weatherproof 10/100 Base-T Ethernet (RJ45)</li> <li>• 150' Cat5e or better Industrial Outdoor rated cable included</li> </ul>						
<b>Wireless Interface</b>	<ul style="list-style-type: none"> <li>• Dynamic Frequency Selection</li> <li>• Antenna alignment tool</li> </ul>						
	<table border="0"> <tr> <td><b>2.4</b></td> <td>802.11 b/g or eMax Proprietary protocol</td> </tr> <tr> <td><b>4.9</b></td> <td>802.11 a/b/g or eMax Proprietary protocol</td> </tr> <tr> <td><b>5.8</b></td> <td>802.11 a or eMax Proprietary protocol</td> </tr> </table>	<b>2.4</b>	802.11 b/g or eMax Proprietary protocol	<b>4.9</b>	802.11 a/b/g or eMax Proprietary protocol	<b>5.8</b>	802.11 a or eMax Proprietary protocol
<b>2.4</b>	802.11 b/g or eMax Proprietary protocol						
<b>4.9</b>	802.11 a/b/g or eMax Proprietary protocol						
<b>5.8</b>	802.11 a or eMax Proprietary protocol						
<b>Antennas</b>	• Omni, Yagi and Panel Antennas available						
<b>Power</b>	<ul style="list-style-type: none"> <li>• Power over Ethernet injector with lightning and surge protection included</li> <li>• POE input voltage: 100 to 240 VAC</li> <li>• POE output voltage: 1 A @ 18 VDC</li> </ul>						
	<table border="0"> <tr> <td><b>Single Radio</b></td> <td>Power Consumption: 0.5A transmit/0.2A standby (9W max/8W typical/3W standby) @ 18 VDC</td> </tr> <tr> <td><b>Dual Radio</b></td> <td>Power Consumption: 0.8A max/0.7A typical/0.3A receive (15W max/12W typical/5W receive) @ 18V</td> </tr> </table>	<b>Single Radio</b>	Power Consumption: 0.5A transmit/0.2A standby (9W max/8W typical/3W standby) @ 18 VDC	<b>Dual Radio</b>	Power Consumption: 0.8A max/0.7A typical/0.3A receive (15W max/12W typical/5W receive) @ 18V		
<b>Single Radio</b>	Power Consumption: 0.5A transmit/0.2A standby (9W max/8W typical/3W standby) @ 18 VDC						
<b>Dual Radio</b>	Power Consumption: 0.8A max/0.7A typical/0.3A receive (15W max/12W typical/5W receive) @ 18V						
<b>ACCESSORIES INCLUDED</b>	Pole mounting hardware, PoE injector, 150' Cat5e industrial outdoor rated cable with weatherproof connector, 6' ethernet cable						
<b>WARRANTY</b>	Three-year warranty						

Please visit [www.encomwireless.com](http://www.encomwireless.com) for customer cases, testimonials and additional information on all ENCOM products and services.

ENCOM Wireless  
7, 640 - 42 Avenue NE Calgary, AB Canada T2E 7J9  
Phone: 403.230.1122  
Fax: 403.276.9575