



**COMMPAK Broadband**  
**2.4 GHz, 4.9 GHz, 5.2/5.8 GHz,**  
**802.11 a/b/g/n**

Experience the most powerful, reliable and  
cost-effective wireless solution on the market.





Municipalities across North America trust wireless networks built with ENCOM COMMPAK products to enable agile, intelligent communications systems that deliver bullet-proof dependability. More economical to implement, expand and maintain than costly wired networks, ENCOM wireless solutions provide maximum functionality at minimal expense, and without compromising quality.

### Proven dependability

ENCOM's 20-plus years of field experience, personal level of service and extensive track record in government and industry ensure the success of your network. With uptimes of 99.999%, built-in diagnostic tools, top-performing products that meet NEMA operating standards, and three-year warranties, COMMPAK products are the reliable choice for municipal governments.

### Cost savings that don't compromise quality

Wireless networks are 1/10th the cost of wired solutions\* and are far easier—and faster—to install, reconfigure, upgrade and expand, than wired networks, and eliminate the need for leased telephone lines. Field-proven, environmentally hardened ENCOM COMMPAK units also reduce maintenance costs while ensuring highest-quality operations.

### Industrial-grade performance (802.11 a/b/g/n up to 300 Mbps)

COMMPAK units are built to perform in challenging environments. With weather-proof and environmentally hardened enclosures, powerful 600 watt transmitters and operation ranges of up to 60 miles, COMMAK products have performance features that enable them to excel in harsh outdoor conditions, busy urban settings and remote locations. Our powerful point-to-point units have a total available bandwidth up to 300 Mbps, while our point-to-multipoint systems offer 70 Mbps.

### Rock-solid security

Wireless security is critical to network reliability. All ENCOM broadband systems are equipped with the most advanced and comprehensive suite of security features available, including WPA2, WPA, WEP, MAC authentication and radius server authentication.

### Future-proof and flexible

With COMMPAK broadband, you can grow, modify and upgrade your network with minimal time and cost, even in difficult terrain. You can select the best licensed or non-licensed frequencies for your needs, including 2.4, 4.9, 5.2, 5.3 and 5.8 GHz. Each unit can function as a master, remote, repeater or mesh node, making it easy to create networks optimized for your enterprise.

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

### Choose ENCOM COMMPAK for

- WiFi and WiMAX (fixed and mobile)
- Wide-area networks (WAN)
- Video surveillance (CCTV)
- Wireless MESH networks (WMN)
- Point-to-point and point-to-multipoint

### Who relies on ENCOM?

- Municipal governments
- Corporate IT departments
- Department of Homeland Security
- Departments of Transportation
- Emergency first responders
- Mobile workforces
- Heavy industry (oil and gas manufacturing)
- Electrical utilities (Smart Grid)
- Water and waste water management

## Dedicated to your enterprise

ENCOM's COMMPAK Broadband product family provides carrier-class functionality in an environmentally hardened, robust package. The product line operates on your choice of 2.4, 4.9, 5.2, 5.3 and 5.8GHz frequencies and comes either with an integrated flat-panel antenna or connector for an external antenna.



### Integrated Unit (Point-to-Multipoint)

Integrated units are equipped with a flat-panel antenna with directional 23dBi gain. These all-in-one units enable rapid and simplified deployment, and are perfect components of high-capacity point-to-point and point-to-multipoint networks. A 2.4 GHz hot spot can be added to any integrated unit for dedicated broadband mobility applications.

- Up to 54 Mbps data range
- 60-mile range, use for all remote locations
- 10-degree beamwidth on antenna
- Low wind loading
- Three-year warranty



### Point to Point Backhaul

- +300 Mbps data rates
- 802.11n 3x3 MIMO technology
- Non line-of-sight performance
- 2.4 GHz and 5.8 GHz
- +20 Mile range

#### Backhaul Applications:

- ITS wireless video
- Security
- Public safety



### Non-Integrated Unit

Non-integrated units feature an N female connector to plug in to your choice of external antenna. These units are an excellent choice for master locations and repeater sites and are available in single and dual radio configurations. An ENCOM dual radio configuration causes no reduction in bandwidth when used as a repeater.

- Master sites with sectoral antennas
- Repeater sites
- Simple configuration with ControlPAK software
- Three-year warranty



### Single and Dual Mesh routers

- 802.11 a/b/g/n
- Self Forming/Self Healing network
- Eliminated need for line of sight
- Mobility networking
- Single network for multiple applications

#### Mesh Applications:

- Mobile networking
- Video-surveillance

## About ENCOM:

ENCOM, based in Calgary, Canada, provides field proven, cost-effective wireless data solutions for municipal and industrial clients, with applications in the areas of:

- Intelligent transportation systems
- Public safety communications
- Municipal corporate security and IT networks
- Water and waste water management
- Electrical utilities
- Oil and gas



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WIRELESS PERFORMANCE		
<b>Receive signal</b>	1 Mbps -97 dBm	12 Mbps -91 dBm
	2 Mbps -96 dBm	18 Mbps -90 dBm
	5.5 Mbps -95 dBm	24 Mbps -86 dBm
	6 Mbps -94 dBm	36 Mbps -83 dBm
	9 Mbps -93 dBm	48 Mbps -77 dBm
	11 Mbps -92 dBm	54 Mbps -74 dBm
<b>Transmit power</b>	23 dB, 600 mW	
<b>Range</b>	60 miles	
<b>Modulation</b>	OFDM and DSS	
<b>Wireless interface</b>	802.11 a/b/g/n or EN-Stream propriety protocol (enhanced security), dynamic frequency selection, 5MHz, 10 MHz and 20 MHz channels, antenna alignment tool	
<b>NETWORK FEATURES</b>	Spanning tree protocol (STP), Network Time Protocol (NTP), DHCP server or client, firewall and NAT, bandwidth test tool, routing, QOS, VPN, VLAN, SNMP	
<b>SYSTEM MANAGEMENT</b>	IP discovery tool (managed remotely), remote SSH, SNMP, FTP	
<b>SECURITY</b>	AES-CCM, WEP Encryption (64 bit, 128bit), WPA, WPA2, TKIP, Mac/ RADIUS Server authentication, EAP-TLS / EAP pass-through	
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	
<b>ACCESSORIES INCLUDED</b>	Pole mounting hardware, PoE injector, 150' Cat5e or better industrial outdoor rated cable with weatherproof connector, 6' ethernet crossover cable	
<b>WARRANTY</b>	Three-year warranty	

## 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

SPECIFICATIONS	
<b>Security (Encryption)</b>	<ul style="list-style-type: none"> <li>• AES-CCM Encryption</li> <li>• 64 bit, 128 bit WEP Encryption</li> <li>• WPA</li> <li>• WPA2</li> <li>• TKIP</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 (Spanning Tree Protocol)</li> <li>• DHCP Server or Client</li> <li>• NTP Network Time Protocol</li> <li>• Firewall and NAT</li> <li>• Routing</li> <li>• QOS</li> <li>• VPN</li> <li>• VLAN</li> <li>• SNMP</li> <li>• Bandwidth test tool</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>
	<p><b>2.4</b> 802.11 b/g/n or eMax Proprietary protocol</p> <p><b>4.9</b> 802.11 a/b/g or eMax Proprietary protocol</p> <p><b>5.8</b> 802.11 a/n or eMax Proprietary protocol</p>
<b>Management</b>	<ul style="list-style-type: none"> <li>• IP discovery tool with remote management</li> <li>• Remote SSH</li> <li>• SNMP</li> <li>• FTP</li> </ul>
<b>Radio Transmit Power</b>	600 mW
<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> <li>• Power Consumption: 0.5A transmit 0.2A standby (9W max 8W typical 3W standby) @ 18 VDC</li> </ul>

802.11N SPECIFICATIONS		
<b>Data Rates</b>	Up to 300Mbps (Legacy 802.11a/b/g (1-54Mbps), 802.11n (up to 300Mbps))	
<b>Data Rate</b>	MCS 0 to 15 for High Throughput mode (6.5 - 300 Mbps) BPSK, QPSK, 16-QAM and 64-QAM for legacy mode (6Mbps - 54Mbps)	
<b>RX Sensivity (BER=10<sup>-6</sup>)</b>	<b>Channel Size</b>	<b>40Mhz</b>
	MCS 0 / MCS 8	-95dBm
	MCS 7	-74dBm
	MCS 15	-75dBm

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