




Nokia RoofTop Wireless Routers – Internet access made quick and easy – wirelessly



The Nokia RoofTop™ Wireless Routing solution enables carriers and service providers to expand to new markets and deliver broadband access to more customers than ever before. This complete network solution can be deployed quickly and efficiently, without a large upfront investment in engineering and equipment.

Nokia RoofTop Wireless Routers combine a radio frequency (RF) modem with a digital Internet protocol (IP) router to create high-speed, "always-on" access to the Internet. And thanks to a specialized wireless IP operating system, the routers self-configure and adapt to network changes in real-time.

Extend your reach

Nokia RoofTop Wireless Routers create routed mesh networks that model the wired Internet using multihop IP routing. These networks are designed to help eliminate the line of sight problems that have been traditionally associated with wireless access. This makes coverage simple and practical in residential neighborhoods and business parks where network planning would otherwise be difficult.

Wireless broadband networks can provide a flexible, cost-effective alternative to wired Internet access. With the Nokia RoofTop solution these networks are not only quick and easy to install, but they also bring wireless access to the consumer market as never before possible.

Build as you grow, rooftop by rooftop

Each Nokia RoofTop Wireless Router performs routing and traffic forwarding

for neighboring routers, becoming part of the network infrastructure. So the network actually becomes more robust as it grows.

The resulting mesh design greatly simplifies deployment because each wireless router only needs line of sight to one other router in the network, not to a specific access point. So you can build networks in locations that would be too costly to cover with alternative solutions.


Because each wireless router is both a subscriber access device and a router in the network, this solution does not require a large upfront investment. Therefore you can expand with demand and invest as your business grows.

Intelligence to adapt

The Nokia AIR Operating System (OS) simplifies installation and ongoing operation of the network by increasing efficiency and reliability. Nokia AIR OS provides the intelligence that allows the network to configure itself as subscribers are added or removed, automatically selecting the best traffic route in real-time. In addition, its wireless routing protocol suite optimizes network efficiency and spectrum use.

The system's packet filtering and node authorization features allow you to build a secure network experience for your customers. And to prevent one subscriber from using all the bandwidth, the Nokia AIR OS lets you set maximum data rates per subscriber, which can be provisioned either symmetrically or asymmetrically. With this feature you also can offer differentiated service levels to businesses and consumers.

Think fast, think wireless



The Nokia RoofTop solution includes various self-configuring features and accessories to simplify installation and operation. Deployment is made even easier by the fact that the wireless router operates in the 2.4 GHz frequency band, which is not subject to spectrum licensing in most countries. This means you can install a fixed wireless broadband network and launch service quickly, without spending time or money on lengthy license procedures.

The family of Nokia RoofTop Wireless Routers includes both the subscriber unit and the "AirHead", which is the Internet access point for the mesh network. The routers are available in both indoor- and outdoor-mounted versions, and include Ethernet and home gateway capabilities.

Main benefits

- Coverage is feasible in residential neighborhoods due to simplified line of sight
- Self-configuring network detects new nodes and dynamically selects the best traffic route
- Intelligent operating system optimizes frequency use for maximum capacity
- Unlicensed 2.4 GHz frequency means less planning time and lower costs
- Minimum upfront investment lets you pay as you grow.

Technical Specifications

	Nokia RoofTop Wireless Router Models R242 & R242A Indoor-Mounted Unit	Nokia RoofTop Wireless Router Models R240 & R240A Outdoor-Mounted Unit
Data Capacity per Cell	12 Mbps (6 x 2 Mbps per channel)	
AirHeads per Cell	Up to 6	
Routers per Cell	Up to 240	
Routers per AirHead	Up to 40	
Antenna Type (Typical)	8 dBi Omnidirectional (external)	8 dBi Omnidirectional (integrated)
Link Range (Typical)		
1 Mbps Data Rate	0.75 Mile	1.75 Miles
2 Mbps Data Rate	0.25 Mile	0.50 Mile
Radio/Modem Specifications		
Frequency Band	2.4 GHz	
Radio Type	Frequency Hopping, Spread Spectrum	
Modulation	2 and 4-level GFSK	
Transmit Power (typical)	24 dBm	12 dBm – 27 dBm (Dynamically adjusts in 1 dB steps)
Receiver Sensitivity (10⁻⁵ BER)		
1 Mbps Data Rate	- 82 dBm (typical)	- 82 dBm (typical)
2 Mbps Data Rate	- 72 dBm (typical)	- 72 dBm (typical)
Interfaces and Connectors		
Ethernet	10/100Base-TX,autosensing,RJ-45	10/100Base-TX,autosensing,RJ-45
Phoneline Networking	NA	HomePNA 2.0/1.0, RJ-11
RF	TNC-Female	N-Female (optional)
Router Environment		
Operational Temperature	0°C - 45°C (32° - 113°F)	-40°C - 55° C (-40° - 131°F)
Relative Humidity	10% - 95% (non-condensing)	100%
Router Weight	0.6 lbs.	3.3 lbs. (inc. antenna and mount)
Dimensions		
Router	5 1/2" W x 4 1/2" D x 1 1/2" H	4 1/2" W x 4 1/2" D x 10 1/3" H
Power Supply/Network Interface Unit	NA	1 3/4" W x 2 3/4" D x 5 1/2" H
Antenna (8 dBi)	20" H x 1 1/4" Base Diameter	18 1/2" H x 3/4" Diameter
Power Consumption	11 Watts @ 120/240 VAC	16 Watts @ 120/240 VAC
In-Line Lightning Arrestor	None	Wireless Router Power Supply/Network Interface
External Power Supply	13 VDC	NA
Management	Nokia RoofTop Router Management System, SNMP	
Internet Protocols	IP, TCP, UDP, ICMP, RIPv1, RIPv2, SNMP, TFTP, IGMP, ARP, Proxy-ARP, DHCP Relay, DHCP Server, NAT	
Agency Compliance	FCC Part 15, Class B (for unintentional emissions) FCC Part 15.247 (for intentional emissions in the ISM bands) R240/R240A Only: FCC Part 68 (public telephone network connection)	

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