

Nokia MetroHopper Microwave Radio™ is a wireless access link that uses the 58 GHz band to provide reliable and rapid transmission access. Compact and discrete, Nokia MetroHopper Microwave Radio makes a variety of new site locations possible and can eliminate the costly delays associated with traditional cellular transmission.

Quick access to revenue

Nokia MetroHopper Microwave Radio enables same-day base station access using the 58 GHz band. Being self-regulating and not requiring co-ordinated frequency planning, this band eliminates the usual delays in integrating base stations into a network, such as waiting for microwave radio licenses or leased lines. This allows you to synchronize your network rollout and produce instant revenue from your base stations.

Effortless site acquisition

Nokia MetroHopper Microwave Radio has only two product variants, which can be mixed in the same hop. The first has a small, rectangular integrated flat panel antenna for sensitive areas where appearance of the antennas is an issue. This enables Nokia MetroHopper Microwave Radio to be deployed where conventional microwave radios could not be even considered.

Alternatively, a 30 cm parabolic antenna variant can be employed when maximum hop length is required. Whichever variant you choose, the lightweight and compact outdoor unit is quick and easy to install, helps to cut network implementation costs and makes possible a completely new set of accessible base station sites.



Minimized network design effort

The 58 GHz band allows very high reuse of the RF channels, enabling hundreds of transmission access points to be established per square kilometer. The Automatic Channel Selection Procedure selects the best channel for transmission during set-up, minimizing the need for on-site configuration and eliminating interference calculations and frequency planning. Nokia MetroHopper Microwave Radio can be connected to Nokia UltraSite™, Nokia MetroSite™, Nokia ConnectSite and Nokia Talk Family base stations using integrated indoor units FXC RRI and IFUE to minimize external cabling. It can also be installed in a standard 19" rack using a stand-alone indoor unit FIU 19E.

Main features

- Fast base station access eliminates costly delays caused by frequency license applications or the unavailability of fixed line access.
- Lightweight and compact design enables installation in innovative urban locations to simplify site acquisition and cut costs.
- The 58 GHz band enables high-density microwave radio networks.
- The use of Time Division Duplex eliminates all sub-bands and separate Hi/Lo OU variants, so only one OU variant is required for each hop. However, flat and parabolic OU variants can be installed in the same hop to combine the benefits of extended hop length and unobtrusive appearance.

Nokia MetroHopper Microwave Radio™ – quick and effortless base station access

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Specifications for Nokia MetroHopper Microwave Radio / Outdoor Unit		
General	Frequency range	57,200 – 58,200 GHz
	Transmission capacity	4 x 2 Mbit/s
	Modulation	MSK
	Channel spacing	50 MHz / 100 MHz (CEPT ECC REC 12-09)
	Power consumption (max)	max 13 W
	Operational temperature	-40 to +55 °C
	Weight and dimensions (with flat antenna)	3 kg, 255 mm x 196 mm x 114 mm (OU) 1.7 kg (alignment unit) Tot: 4.7 kg
Weight and dimensions (with parabolic antenna)	2.6 kg, 298 mm x 196 mm x 98 mm (OU) 2.9 kg (alignment unit) 3.1 kg (30 cm parabolic antenna) Tot: 8.6 kg	
Transmitter	Output power (typical)	5 dBm
Receiver	Threshold level BER 10 ⁻³ (typical)	< -80 dBm (flat), < -79 dBm (parabolic)
	Threshold level BER 10 ⁻⁶ (typical)	< -78 dBm (flat), < -77 dBm (parabolic)
Antenna type	Integrated flat panel antenna with vertical polarization or 30 cm parabolic antenna	
	Antenna gain (flat)	36 dBi
	Antenna gain (parabolic)	43.5 dBi (at 58.0 GHz)
Alignment bracket	Horizontal adjustment coarse / fine	±90° / ±12°
	Vertical adjustment coarse / fine	±90° / ±12°
	Weight	1.7 kg (flat), 3.0 kg (parabolic)
	Accessories	Optical alignment tool Outdoor Unit mounting adapter plate (for installation on poles with diameter 120–300 mm)
Specifications for FIU 19 / FIU 19E Indoor Units		
General	Installation	Standard 19" rack
	Number of outdoor units ¹⁾	1–3 / main unit
	Weight and dimensions (mm)	2.8 kg, 2/3 U x 444 x 300
	Power consumption	max 17 W
4x2M plug-in unit	Electrical interface	4 x 2 Mbit/s, ITU-T G.703, 75 ohm SMB or 120 ohm RJ-45
16x2M expansion unit	Electrical interface	16 x 2 Mbit/s, ITU-T G.703, 75 ohm SMB or 120 ohm RJ-45
	Dimensions (mm)	2/3U x 444 x 300
Auxiliary data channel plug-in unit	Electrical interface	EIA-232 or ITU-T V.11: max. 9600 bit/s ITU-T V.11 or ITU-T G.703: max. 64 kbit/s Four programmable I/O interfaces
Ethernet interface plug-in unit	Electrical interface	2 x 10/100Base-T Ethernet, RJ-45 IEEE 802.3, IEEE 802.3u, IEEE 802.3x
Specifications for BTS integrated Indoor Units		
FXC RRI	Installation	Nokia UltraSite EDGE base station Nokia MetroSite EDGE base station Nokia ConnectSite base station Nokia MetroHub™ transmission node
	Number of outdoor units ¹⁾	2 / interface unit ²⁾
IFUE	Installation	Nokia UltraSite WCDMA base station Nokia MetroSite WCDMA base station Nokia S-AXC transmission node
	Number of outdoor units ¹⁾	3 / interface unit ²⁾

¹⁾ Nokia FlexiHopper™ microwave radios and Nokia MetroHopper Microwave Radios can be mixed

²⁾ Number of interface units depends on base station type