

A new and cost-efficient way to build networks

Nokia Flexi WCDMA Base Station

Nokia Siemens
Networks



While WCDMA is now clearly established as the key mobile radio technology for today and tomorrow, operators face many challenges in rolling out and expanding their networks.

Site and operational cost pressures, difficulty in finding base station sites and the need to evolve smoothly to higher data speeds and performance are obvious examples.

The Nokia Flexi WCDMA Base Station is small, light, versatile and offers macro base station capacity to meet all these challenges. With its minimum configuration featuring just two small modules that can be hand-carried, the base station delivers leading radio performance and provides a smooth evolution to future radio technologies. It also raises base station environmental performance to a new level.

Build your network easily and at the lowest cost

Nokia Flexi WCDMA Base Station brings a new kind of ease and efficiency to site building. Small, light and constructed of a few modules that can be installed independently, this base station can bring WCDMA and HSPA capacity, even to fully equipped sites.

It can also turn previously unfeasible locations into effective macro-capacity sites. Indoor locations include small closets, elevator motor rooms or walls and floors. Outdoors, balconies, rooftops, walls and lighting and electricity poles are equally useful. An optional outdoor and indoor cabinet is also available for the base station modules, complete with long-term battery back-up.

“WWF believes that the telecom sector could make a major contribution to a more sustainable future. We are delighted that Nokia is showing leadership in the sector by developing more energy efficient products and improving its environmental performance both in its own operations as well as in its end-user and business-to-business connections”

- Jean-Paul Jeanrenaud, Head of WWF Business and Industry Relations

In either environment, the units can be fitted inside an existing Nokia UltraSite EDGE Base Station or a standard 19” rack for an effective co-siting solution, adding high capacity WCDMA and HSPA functionality to the network with minimal additional site costs.

Nokia Flexi WCDMA Base Station modules can be connected directly to the antenna or installed nearby, to provide the highest radio performance. This brings the lowest network cost because fewer sites are required.

Reduce site costs with improved network performance

The excellent capacity/size ratio, extremely low power consumption and remote capacity provisioning of the Nokia Flexi WCDMA Base Station enables considerable overall cost savings in site implementation and operation. With easy site acquisition, efficient re-use of the existing 2G sites and excellent site performance the number and cost of the 3G sites can be reduced. As base station site costs make up the majority of the total radio network investment, the improvement in cost structure will be nothing short of revolutionary.

Save up to 60% in electricity bills

The Nokia Flexi WCDMA Base Station helps to reduce operational expenditure radically. Its power consumption is typically 60% lower than that of traditional macro base stations. ‘Siteless’ installations and a wider range of sites can be used to minimize site rental costs. The most economical options can be chosen without compromising capacity and performance.

What’s more, Nokia Flexi WCDMA Base Station features integrated transmission interfaces, which further reduce the need for site space. Couple the base station directly with our powerful microwave radios and appropriate antennas for a complete site solution.

To protect and improve profits in today’s challenging operating environment, HSPA services must be provided at the lowest possible cost per bit. A key factor is the cost effectiveness and scalability of the operator’s transport network in handling high volumes of data traffic. By optimizing the transport media for different services, our hybrid backhaul provides an effective answer by decoupling transport costs from capacity.

Minimize base station site capital costs

Save capital costs by eliminating shelters in outdoor installations and by using new indoor locations. The base station’s small size and light weight can dramatically cut civil and construction works, helping to ensure that existing sites are effectively re-used. The Nokia Flexi WCDMA Base Station’s low power consumption requires considerably less power back-up capacity. For those sites where no power and battery back-up system capacity is available or only an AC supply is used, a small, integrated power module with an optional battery is sufficient for a typical site application. Furthermore, indoor installations need no air-conditioning because natural convection will typically provide the necessary cooling.

"In many ways we view the new base station series... as the most innovative and cost-efficient offering among the main suppliers."

- Carnegie

Maximize efficiency with Nokia Siemens Networks Services

Nokia Flexi WCDMA Base Station comes complete with a tailored package of services, from optimization and planning to full turnkey projects and managed services, to achieve industry-leading coverage and capacity.

Enhance capacity and bandwidth the easy way

Nokia Flexi WCDMA Base Station supports High Speed Downlink Packet Access (HSDPA) technology to boost downlink data speeds and capacity. Furthermore, remote software activation will enable High Speed Uplink Packet Access (HSUPA) functionality for enhanced uplink bandwidth and capacity. Remote capacity provisioning will expand base station capacity without costly site visits as the network gains more traffic.

Evolve smoothly to the multiradio future

The Nokia Flexi WCDMA Base Station supports the IMT-2000 core frequency band from day one. To support 3GPP's standardization of WCDMA for several new bands, we provide different frequency band variants of the Nokia Flexi WCDMA Base Station, including 850 and 900MHz bands for WCDMA coverage with cost efficient multiradio site solution. Rapid introduction of new frequencies is enabled by the base station's open internal interfaces that comply with the Open Base Station Architecture Initiative (OBSAI) specification, and its modular structure.

In addition, the open interfaces enable other radio technologies to be developed quickly, helping operators and service providers to bring new technologies to market quickly. We have already introduced both EDGE and WiMAX base stations built on the Nokia Flexi Base Station platform.

Support environmental values and gain customer loyalty

Nokia Flexi WCDMA Base Station's high performance and compact size enables coverage and capacity to be built using less equipment across fewer and smaller sites. This is

inherently environmentally-friendly. These environmental credentials are further enhanced by lower transportation needs, complementing the environmental benefits of our smart logistics solutions.

With its small size, Nokia Flexi WCDMA Base Station uses less manufacturing material, complying with European Union environmental directives, such as RoHS.

Meanwhile, the base station's exceptionally low electricity consumption, which is also helped by the elimination of powerhungry air conditioning, brings environmental benefits in daily operation.

Nokia Flexi WCDMA Base Station – fits practically anywhere

Nokia Flexi WCDMA Base Station is a complete solution for building coverage and capacity to satisfy mobile data and voice subscribers today and in the future. Build a 3G network now in a completely new way with the Nokia Flexi WCDMA Base Station. It fits practically anywhere, helping to minimize network and base station site costs and maximize network quality.

When you think you've run out of options... the Nokia Flexi Base Station will fit right in.

"...Nokia does a few key things: it demonstrates a commitment to innovation within its well-deployed WCDMA solution all while meeting challenges that lay ahead for operators"

- J. Marcheck, Current Analysis

Technical characteristics

Installation options	Without cabinet indoor and outdoor: with modules stacked on the floor or a shelf, wall, pole mast. Distributed and mast head site solution supported.
	With cabinet indoor and outdoor: inside an optional cabinet, inside a Nokia UltraSite™ EDGE BTS or a standard 19" rack.
Frequency bands	WCDMA 2100, 1700/2100, 1700, 1800, 1900, 850, 900 MHz ¹⁾
Output power ²⁾	Typical 8, 21 or 43 W per carrier , 86W per sector
Maximum capacity	12 carriers: guaranteed 20 W per carrier 6 carriers: guaranteed 40 W per carrier
Maximum number of sectors	6 sectors, 2 carriers per sector guaranteed 20 W per carrier
BTS dimensions	2+2+2 @ 20 W or 2+2+2 @ 40 W (Release 2) with with 3 modules stack installation
BTS height	399 mm (9U), 459 mm with plinth
BTS width	447 mm (19" rack installation)
BTS depth	560 mm outdoor (422 mm without outdoor covers)
Module dimensions*	
Module height	133 mm (3U)
Module width	447 mm (19" rack installation)
Module depth	560 mm outdoor (422 mm without outdoor covers)
Maximum weight	23 kg for one module 65 kg for 2+2+2 @ 20 W, 3 modules stack installation
Power consumption	1- Omni @ 20 W; minimum 190 W DC, typical 250 W DC 1+1+1 @ 20 W; minimum 400 W DC, typical 510 W DC 2+2+2 @ 20 W/1+1+1 @ 40W; Minimum 490 W DC, typical 660 W DC
Nominal DC voltage	40.5 – 57 VDC
Nominal AC voltage	Optional 184-276 VAC power module with battery back-up, see module dimensions*
Operating temperature	-35 to +55 °C
Ingress protection class	IP55 for BTS electronics

¹⁾ Also other bands based on market need

²⁾ Power at BTS module antenna connectors. Output power level can be selected remotely with a software license.

