

Our nanoBTS small cells are complete GSM base stations which use the standard Um interface to support all GSM handsets, and an Abis interface carried over IP for low cost backhaul

nanoBTS[®]

2G SOLUTION

nanoGSM Access Point for enterprise and public access

nanoBTS Access Point

Unlike repeaters, each nanoBTS picocell actually adds capacity to your network while avoiding cell distortion and interference issues, solving handover, and integrating with existing network management systems. nanoGSM reduces capex with low-cost base stations and reduces opex with simple, straightforward IP backhaul. It's driving down the cost of adding coverage and capacity for operators all over the world.

EDGE support gives up to three times the data rate of standard GPRS. In addition, using half rate AMR means that each nanoBTS can provide up to 7.3 Erlangs - enough to support over 300 users with a 20 mErlang traffic profile.

They also have the full benefits of the existing nanoBTS picocell range including:

- Low cost IP backhaul
- Simple deployment - using a single Ethernet connection for power, traffic and signaling
- Network Listen[™] to supplement RF planning allowing planners to see into the difficult indoor environment to optimize coverage and avoid interference issues.

Viper[™] virtualised enterprise RAN platform

The nanoBTS is part of ip.access' Viper end-to-end small cell platform for enterprise RAN, which integrates the following components:

- A range of plug-and-play 2G, 3G and 4G small cell Access Points for small, medium and large enterprise deployments
- Virtualised Gateways which securely handle and route all traffic between the APs and the operator's core network
- As A Service deployment models, including core network integration, AP deployment, and network operation.



nanoBTS nanoGSM AP

ip.access provides a complete end-to-end solution that integrates with your core network and starts generating revenues quickly, and dramatically improves capacity for those using the macro cell outside as well.

nanoBTS Access Point

Radio interface parameters

GSM 850 Model

Transmit frequency	869-894MHz
Max. output power	+20 dBm
Min output power	-4 dBm
Receive frequency	824-849MHz

GSM 900 Model

Transmit frequency	925-960MHz
Max. output power	+20 dBm
Min output power	-4 dBm
Receive frequency	880-915MHz

GSM 1800 Model

Transmit frequency	1805-1880MHz
Max. output power	+23 dBm
Min output power	-1 dBm
Receive frequency	1710-1785MHz

GSM 1900 Model

Transmit frequency	1930-1990MHz
Max. output power	+23 dBm
Min output power	-1 dBm
Receive frequency	1850-1910MHz

All Models

RF Performance	GSM 05:05
Channel spacing	200kHz
Output power control	12 steps
Receive gain control	26 Steps
Receiver sensitivity	-106 dBm
Max RX input power	+10 dBm

Channel Support

Each nanoBTS supports a single TRX and can act as a standalone BTS
Up to 4 nanoBTS can also be connected to act as a multi-TRX BTS

Single TRX or C0 of Multi-TRX

TS0 = full BCCH, combined BCCH or combined BCCH with CBCH

TS1-7 = TCH/F/H, PDCH or Dynamic PDCH/TCH

Additionally TS1 may be SDCCH/8 + SACCH/C8 (with optional CBCH)

Multi TRX (non C0)

TS0-7 = TCH/F/H

Additionally TS1 may be SDCCH/8 + SACCH/C8

User Services

Teleservices

Telephony, SMS MT/PP, SMS MO/PP

SABP interface of SMS

CB single message or user cell decryption

Cellular text mode

Speech format support

GSM FR and EFR, AMR (full and half-rate dynamic AMR based on QOS and load)

Circuit switched data

Single slot BS20 at up to 9.6kb/s

BS21-26, plus BS61, BS81

GPRS support

GPRS Coding Schemes CS 1-4

E-GPRS Modulation and Coding Schemes MCS 1-9

Multi-slot Class 12

Dynamic PDCH for optimizing mix of service for voice/data

Link adaptation

E-GPRS incremental redundancy and dynamic window size

Security Services

Air Interface - A5/1, A5/3

Abis over IP interface:

Signaling and management - TLS/AES

Voice - secure RTP/AES

GPRS - secure RTP/AES

System features

Channel assignment and classmark

Directed retry based on load, power and cell priority

Handover

BTS software update via BSC

Abis link performance monitoring

Physical & Electrical

Electrical interface

Single RJ45 auto-select 10/100 Ethernet supporting PoE

Timing Interface Bus (TIB) providing nanoBTS interconnect for multi-TRX functionality

Power supply

Power supply type Power-over-Ethernet via supplied adapter or from PoE switch

Supply voltage range 38-57V DC

Power consumption 13W

Environmental & Physical

Dimensions 295 x 224 x 63 mm

Weight 2 kg

Temp. range -5° to 45°C ambient

Humidity 5%-90% non-condensing

Mounting Wall or ceiling, with bracket provided.

For multi TRX a second BTS can be mounted on top of the first

Standards

CE marked, UL & FCC listed

Viper™ end-to-end small cell platform

