



nanoBTS®

nanoGSM Access Point for
enterprise and public access

Our nanoBTS Access Points (APs) are complete GSM base stations that use the standard Um interface to support all GSM handsets and an Abis interface carried over IP for low cost backhaul



nanoBTS GSM AP

The nanoBTS Access Point

Unlike repeaters, each nanoBTS picocell 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 signalling
- 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 APs 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

ip.access provides a complete end-to-end solution that integrates with your core network and provides mobile service quickly. The result is high speed data rates and excellent quality voice for your indoor users, and dramatically improved capacity for those using the macro network outside as well.

nanoBTS Access Point

nanoBTS 165 models

GSM 850/900 Model (165DU/165CU)

Tx frequency: 869-894MHz/925-960MHz

Max output power: +20 dBm

Min output power: -4 dBm

Rx frequency: 824-849MHz/880-915MHz

GSM 1800/1900 Model (165G/165H)

Tx frequency: 1805-1880MHz/1930-1990MHz

Max output power: +23 dBm

Min output power: -1 dBm

Rx frequency: 1710-1785MHz/1850-1910MHz

All models

Performance: GSM 05:05

Channel spacing: 200kHz

Output power control: 12 steps

Rx gain control: 26 steps

Rx 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 nanoBTSs can be connected to act as a multi-TRX BTS

Single TRX or CO 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 CO)

TS0-7 = TCH/F/H

Additionally TS1 may be SDCCH/8 + SACCH/C8

Viper™ end-to-end small cell platform

User Services

Teleservices

Telephony, SMS MT/PP, SMS MO/PP

SABP interface of SMS

CB single message or user cell description

Cellular text mode

Speech format support

GSM HR, 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:

Signalling 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

Network Listen (NWL)

Uplink interference monitoring

OCXO for high stability internal frequency

Network Interfaces

Single RJ45 auto-select 10/100 Ethernet supporting PoE

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

Power supply

PoE: Via supplied adaptor or PoE switch

Supply voltage range: 38V to 57V DC

Power consumption: 13W

Environmental & physical

Dimensions 295 x 224 x 63mm

Weight 2kg

Temperature range -5° to 45°C

Operating humidity 5 to 90% non-condensing

Ingress protection IP40

Mounting

Bracket for wall or ceiling mounting

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

