ip access

The R30 helps operators meet coverage obligations in remote areas where ARPU is low; the R30 is a low cost complete 2TRX GSM basestation with flexible backhaul options

R30

2G SOLUTION

Ruggedised 2G small cell for rural and remote

R30 Access Point

Optimum Performance

The R30 has up to 2x5W output power and is available for the GSM-850 and EGSM-900 bands with a range of up to 10km. To provide mobile internet access to users, the R30 supports both EDGE and GPRS data.

Satellite Backhaul

The R30 is optimised for high-latency backhaul links. It uses RTP multiplexing in both directions for improved efficiency, as RTP packets can be shared by multiple simultaneous voice calls. The R30 can be deployed with a range of different backhaul options including satellite, WiMAX, point to point microwave or DSL. It builds on the existing model 165 BTS which has already been deployed over satellite in many different places including remote rural locations, ships and aircraft.

Low power

In remote locations providing power can be a significant part of the deployment cost. The R30 is optimized to use the minimum power to provide the required coverage. For example when not required for load the second TRX can be powered down, making the R30 ideal for use with solar powered systems.

Supports multiple users

With 2 TRX supporting up to 30 simultaneous voice calls with half rate AMR each R30 can provide up to 20 Erlangs - enough to support 1000 users with a 20 mErlang traffic profile.

Easy Integration

The R30 connects to the nanoGSM BSC which is live in over 60 networks and has been integrated with all leading MSCs and SGSNs.

Viper™ virtualised enterprise RAN platform

The R30 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.

R30 GSM Basestation

The nanoGSM system is a proven end-to-end solution carrying billions of minutes of traffic every year, all over the world.

R30 Access Point

Radio interface

Bands	GSM-850 EGSM-900
Transmit frequencies	869-894MHz 921-960MHz
Tx channel spacing	200kHz
Max. output power	+37dBm per TRX
Min. output power	BCCH: +23dBm Slave TRX: +5dBm
Output power control	15 steps
Receive frequencies	824-849MHz 876-915MHz
Rx channel spacing	200kHz
Performance	Normal BTS GSM 45.005 class

Channel Support

Each R30 supports 2 TRXs

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 decription

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:
- 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

Network Listen (NWL)

Uplink interference monitoring

Optional Embedded Applications Processor (EAP) for additional on-site functionality

Physical & Electrical

Power supply

Supply voltage range	24V to 48V DC
Power consumption	42W (no RF) 68W (Single TRX max) 96W (Two TRX max)
EAP Option	+16W
Cold start heater	154W

Environmental & Physical

Dimensions (HxWxD)	470 x 380 x 180mm
Weight	18.5kg unit 21.5kg with solar shield and fixings
Ambient temp. range	-40° to +55°C
Humidity	5%-90% non-condensing
Mounting	Mounting bracket for pole or wall mounting
Ingress protection	IP67

R30 block diagram