InterReach® picoBTS

EDGE-Enabled GSM pico Base Transceiver Station

ADC's InterReach® Office (IRO) solution offers a unique, integrated, simple and cost-effective wireless enterprise solution. This solution combines an all-IP architecture and core network technology with ADC's industry-leading in-building coverage capabilities. This solution integrates a fleet of mobile phones with offices' private voice network, providing excellent on-site coverage, dedicated capacity and wireless PBX services. At a lower cost, IRO users can enjoy high quality voice and data services. The IRO family includes InterReach Unison®, InterReach Fusion®, InterReach picoBTS, InterReach® PicoBSS, and InterReach® Mobility Gateway.

Based on the proven InterReach® nanoBTS™ GSM/GPRS technology, the new InterReach picoBTS EGSM/AMR base station represents a significant step forward in providing high quality in-building coverage with a Distributed Antenna System (DAS). This integrated picoBTS and DAS system provides a higher capacity and enhanced coverage to serve voice and data traffic than the nanoBTS-only network configuration, yet still maintains the same extensive feature set as the nanoBTS for GSM voice, GPRS and EDGE services.

For operators moving to higher speed data networks with EDGE, the incentive to provide high-quality coverage in buildings is very apparent. With industry-leading GSM-over-IP technology, it is possible to bring cost-effective, high-speed data coverage to users where coverage and capacity are most needed.

SPEC SHEET

Features:

- Up to three times the maximum GPRS data rate with EDGE support
- Up to three times increase in the full rate number of supported users with half rate AMR
- Support for EDGE coding MCS1-9 and GPRS coding CS1-4
- Easy DAS integration for extended coverage
- 100 Mbps Ethernet connection for Abis-over-IP to the BSC
- The first picoBTS designed to work with DAS in the industry

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Applications:

- Enhanced coverage for in-building
- In-building capacity and coverage for large Enterprises
- Hybrid indoor/outdoor applications when deployed with FlexWave microBTS
- Delivering GSM, GRPS, EDGE access in-building, campus, stadiums, airports, train stations, subways, tunnels, on ships and ferries

IP-RAN System Architecture

The InterReach picoBTS EGSM/AMR is a complete GSM/EDGE base station that conforms to the picocell standard and delivers IP-RAN network implementation with IP-based backhaul to the Base Station Controller (BSC) which can take advantage of the existing IP broadband infrastructure.

The InterReach picoBTS EGSM/AMR, FlexWave micoBTS GPRS/GSM and the InterReach nanoBTS EDGE/AMR are controlled by the same Base Station Controller (BSC). System configuration, performance and fault reporting also are handled by the same OMC-R Management System.

InterReach picoBTS EGSM/AMR operates in the 850, 900, 1800 and 1900MHz bands. For those applications that require higher capacity, two InterReach picoBTS EGSM/AMR can be combined into a four TRX base station to provide up to 62 simultaneous calls using half rate AMR.

Optimizing Data Capacity

The InterReach picoBTS EGSM/AMR supports all the EDGE coding schemes from MCS1-9, giving a maximum nominal data rate of 414 kpbs which is up to three times the maximum data rate of the GSM/GPRS model. The BTS also monitors for optimum RF conditions for data transfer and alters the data throughput to achieve the fastest rates. This ensures the best possible user experience and maximizes the use of the available spectrum.

For many of the new data services, the majority of usage will be indoors where the EDGE BTS with DAS will provide high quality signals within the in-building coverage area. The higher rate data coding schemes of GPRS or EDGE will be available to the users with higher quality signals.

Improved Voice Quality and Capacity

In networks where AMR capable handsets are being deployed, the new coding schemes combine to improve the quality of voice calls. In addition, as the quality of the AMR half rate coding is very similar to the standard full rate GSM, half rate AMR can be used to double the number of voice channels available per BTS. Erlang models show that this increases the number of supported users by up to three times, improving the return on investment for the BTS. The dual TRX capacity of the InterReach picoBTS EGSM/AMR provides enhanced capacity for voice and data traffic.

Easy Deployment

InterReach picoBTS EGSM/AMR with DAS deployment offers a cost-effective alternative to the traditional multi-nanoBTS deployment approach providing for better GSM coverage and capacity in buildings. Due to the small size and deployment flexibility, the InterReach picoBTS EGSM/AMR can easily achieve uniform coverage and capacity everywhere in the coverage area. The unique Network Listen™ function supplements the conventional RF planning process, allowing the planners to see into the difficult indoor environment to optimize the coverage and interference avoidance.

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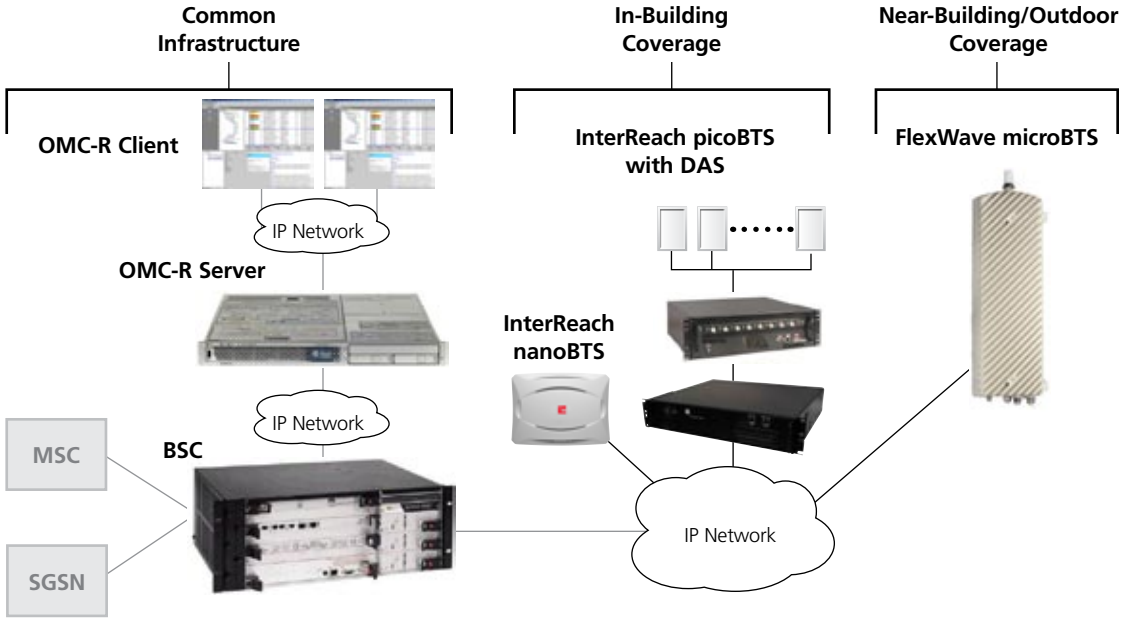

Specifications

Um RADIO INTERFACE

Transmit Frequencies	
GSM 1800:	1805 to 1880 MHz
GSM 1900:	1930 to 1990 MHz
GSM 900:	925 to 960 MHz
GSM 850:	869 to 894 MHz
Receive Frequencies	
GSM 1800:	1710 to 1785 MHz
GSM 1900:	1850 to 1910 MHz
GSM 900:	880 to 915 MHz
GSM 850:	824 to 849 MHz
Channel Spacing:	200 kHz
Max. Output Power	
1800 and 1900 MHz GSM & GPRS (CS 1-4):	+17 dBm
1800 and 1900 MHz EDGE (MCS 1-9):	+7 dBm
900 and 850 MHz GSM, GPRS (CS 1-4) and EDGE (MCS 1-9):	+15 dBm
Static Power Control:	6 steps (2 dB each)
Dynamic Power Control:	6 steps (2 dB each)
Channel Spacing:	200 kHz
Performance:	GSM 05:05
Gain Control Steps:	26
RF Ports:	TX, RX and Network Listen™
Connector Type:	N-type Female
Channel Support:	Each picoBTS supports two TRX's and can act as a standalone BTS
Single TRX or C0 of MultiTRX:	TS0 = full BCCH, Combined BCCH or Combined BCCH with CBCH TS1-7 = TCH, PDCH or Dynamic PDCH/TCH Additionally TS1 may be SDCCH/8 + SACCH/C8 (with optional CBCH)
Multi TRX (non C0):	TS0-7 = TCH Additionally TS1 may be SDCCH/8 + SACCH/C8
Internal Clock Reference:	Oven Controlled Crystal Oscillator(OCXO), better than 100 ppb stability per GSM 05.10 pico

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USER SERVICES

Teleservices:	Telephony Short Message Service MT/PP Short Message Service MO/PP Short Message Service CB single message for user cell description
Speech Format Support:	GSM FR and EFR AMR (full and half-rate, all codecs)
Security:	Air Interface – A5/1, A5/2 Abis over IP interface: – Signalling and management – TLS/AES – Voice - secure RTP / AES
Circuit Switched Data:	Single slot BS20 at up to 14.4 kb/s BS21-26, plus BS61, BS81
GPRS and EDGE Support:	GPRS Coding schemes – CS1-4 E-GPRS Modulation and coding schemes – MCS1-9 Multi-slot class 10 Dynamic PDCH for optimising mix of service for voice/data Link adaptation E-GPRS incremental redundancy and dynamic window size
Interface Connection:	Dual RJ45 auto-negotiate 10/100 Ethernet Timing Interface Bus (TIB) providing picoBTS interconnect for capacity expansion

PHYSICAL

Dimensions:	43.94 cm x 38.1 cm x 8.8 cm (17.3" x 15" x 3.47")
Weight:	11.39 kg (25.1 lbs)
Power consumption:	50 W
Input supply:	85 - 264 VAC, 47-63 Hz
Operational Temperature:	-5° C to +45° C ambient
Operational Humidity:	10% - 90% non-condensing
Standards:	CE marked, UL and FCC approved
Mounting:	19" rack mountable chassis

SPEC SHEET

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