AirSynergy

4G Pico Base Station with Integrated Wireless Backhaul

The world's most compact and versatile
4G Pico Base Station

Airspan

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The world's most **compact and versatile** 4G Pico Base Station

Addressing unprecedented **data traffic growth**

Wireless Broadband Operators are currently experiencing an unprecedented growth in data traffic, which today's networks are struggling to satisfy.

As part of a heterogeneous network, Pico Base Stations address this problem by being located closer to the end user, providing much higher aggregate data rates. The issue with today's Pico Base Stations has been the difficulty in connecting them with the rest of the network.

AirSynergy solves this problem by combining a 4G Pico Base Station with an integrated, high capacity, self-connecting wireless backhaul.

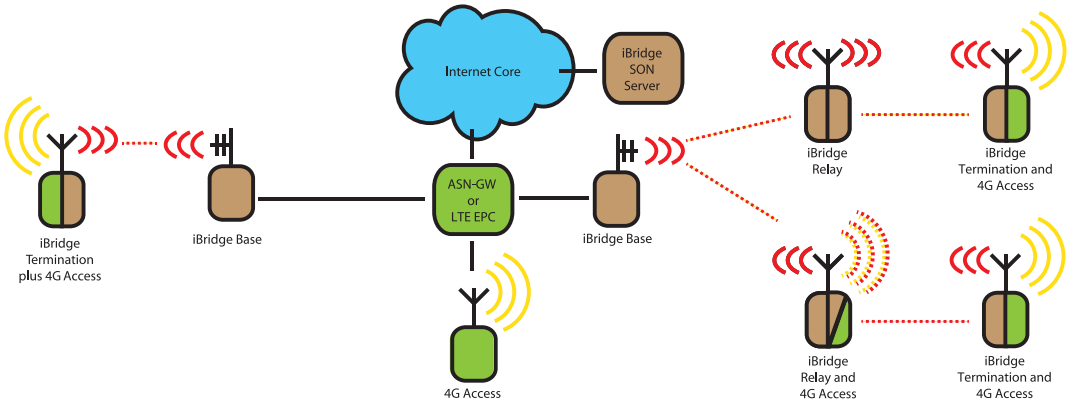
AirSynergy is Airspan's latest generation of Software Defined Radio (SDR) base stations, providing both data access and wireless backhaul from the same unit. AirSynergy is an all-in-one compact Pico Base Station which supports a wide range of radio interfaces including WiMAX and 4G LTE technologies.

> The integration of both backhaul and access technologies is an industry first, and redefines the way in which networks can be constructed.

This technique enables AirSynergy to be deployed on street furniture (e.g. lamp posts), with connections automatically established through neighboring nodes to establish a backhaul connection with the network.

A key feature of the AirSynergy technology is the ability to self-configure, self-connect, self-heal and self-optimize when deployed as a network of elements. At the same time AirSynergy provides guaranteed levels of service with Quality of Service (QoS) characteristics in line with the requirements of the access interface

Architecture **Diagram**



4G ACCESS

AirSynergy supports either LTE or 802.16e WiMAX access technologies in addition to Airspan's Intelligent Wireless Backhaul technology, iBridge. WiMAX provides anytime, anywhere mobile access to broadband services at much higher capacity than is possible with 3G networks. Airspan's LTE solution is compliant with the 3GPP standards and interoperable with commercial UE devices.

AirSynergy is based on Airspan's Software Defined Radio (SDR) technology, and as a result supports a range of air interfaces through remote software updates.

INTEGRATED WIRELESS BACKHAUL

AirSynergy uniquely provides an integrated wireless backhaul solution using Airspan's iBridge technology. iBridge is a self-configuring, self-connecting point-to-multipoint backhaul solution, which automatically extends the reach of the network from existing Points of Interconnect (POI). iBridge supports multi-hop relay connections, providing either LTE or WiMAX coverage from each node in addition to the iBridge backhaul functionality.

SUSTAINABLE

AirSynergy Pico Cells can be installed on existing street poles (lamp posts or utility poles) which are either OPEX free, or have a nominal on-going OPEX, thus avoiding the recurring costs associated with a traditional Macro Base Station. AirSynergy also requires a fraction of the power of a Macro Base Station, which further reduces the OPEX, and also allows renewable energy sources, such as solar panels, to be used.

ALL-IN-ONE SOLUTION

AirSynergy consists of a single self-contained unit, removing the need for an equipment rack or any indoor equipment. Units are powered from a compact power supply unit based on commercial Power Over Ethernet technology.

PLUG AND PLAY

AirSynergy supports automated configuration from the management system, simplifying the installation of each base station. This automation, coupled with the self-connecting iBridge backhaul results in a true plug and play solution, allowing service to be rapidly deployed.

REDUCED CAPEX / OPEX

AirSynergy is a compact all-outdoor 4G Pico Base Station, which can be installed without conventional indoor infrastructure and associated power and air-conditioning systems.

The integration of wireless backhaul reduces the equipment installed per site, as separate backhaul infrastructure is not required. This in turn reduces spares holding and inventories.

The iBridge backhaul supports self healing, allowing the network to automatically recover in the event of failure. This increases overall service availability and customer satisfaction.

FLEXIBLE ARCHITECTURE

The iBridge network can support different topologies as new elements are added to the network, enabling a highly flexible and versatile deployment. Each AirSynergy node can adopt both access and backhaul functionality, automatically changing backhaul role from termination to relay to ensure a dynamic self-adapting architecture.

Through the use of Airspan's real-time iBridge SON Server, iBridge supports self-continuous optimization of backhaul links, ensuring interference between iBridge nodes is minimized and delivering end-to-end QoS across the network with minimal spectrum consumption.

RADIO PLANNING

AirSynergy is designed to integrate with standardized WiMAX and LTE SON solutions. When coupled with the iBridge SON Server, this allows a broadband wireless network to be deployed without the need for extensive, formal planning. Nodes are incrementally added in the target service area until the desired coverage is achieved.

The products self-configure, self-connect, and self-optimize. In addition, unlike conventional mobile network planning and design, expansion of the coverage area can be optimized and adapted depending on the local need.

The pico cell technology solution is designed for deployment onto standard utility poles, for example telephone poles, street lamps or power poles. Coverage is created by deploying multiple cells in chains or clusters, depending on the desired wireless service footprint.

LTE SPECIFICATIONS

RADIO INTERFACE

Version:	Release 8/9 (10 in future)
Operational Frequency Bands:	2.6 GHz 3.5 GHz 800 MHz 700 MHz
Duplex:	FDD & TDD
Max Channel BW:	10 MHz (20 MHz in future)
Max Transmit Power:	2 x +27 dBm & 2 x +30 dBm options
MCS Support:	QPSK, 16-QAM, 64-QAM
Synchronization:	GPS & IEEE1588

KEY FEATURES

Advanced Antenna Techniques

- 2 x 2 MIMO
- SU-MIMO
- MU-MIMO

System Features

- Inter-RAT Mobility
- RAN Sharing
- Automatic Neighbor Relation (ANR)
- Inter-cell Interference Coordination

iBridge SPECIFICATIONS

iBridge RADIO INTERFACE

Operational Frequency Bands:	Various (between 450 MHz and 6 GHz)
Duplex:	TDD
Max Channel BW:	10 MHz
Max Output Power:	2 x +27 dBm or 4 x +27 dBm
MCS Support:	Up to 256-QAM rate 5/6
MIMO Matrix:	2 x 2 or 4 x 4

WiMAX SPECIFICATIONS

R1 RADIO INTERFACE

Operational Frequency Bands:	3400-3600 MHz 3600-3800 MHz 2.6 GHz 2.3 GHz 1.4 GHz 700 MHz
Duplex:	TDD
Max Channel BW:	10 MHz
Max Transmit Power:	2 x +27 dBm & 2 x +30 dBm options
MCS Support:	Up to 64-QAM rate 5/6

KEY FEATURES

Advanced Antenna Techniques

- 2 x 2 MIMO
- Matrix A MIMO
- Matrix B MIMO
- Adaptive Matrix A & Matrix B

System Features

- Fractional Frequency Reuse (FFR)
- Handover
- AES Encryption
- EAP-TTLS & EAP-TLS Authentication

Network Architecture

- IP convergence sublayer
- Ethernet convergence sublayer
- Profile C interoperability with ASNGW
- Standalone Mode

PHYSICAL SPECIFICATIONS

R1 RADIO INTERFACE

aNode Configurations:	Dual & Single RF Node Options
Antenna Configurations:	X-Polar Omni X-Polar Smart Switching Directional X-Polar Sectored Quad X-Polar Sectored
Site Configurations:	Omni Access (with or without iBridge Backhaul) Multi-sector (with or without iBridge Backhaul) Single-sector (with or without iBridge Backhaul) iBridge Relay (with or without Access) iBridge Base
*Dimensions:	480 x 122 mm
*Weight:	6 kg
*Power Consumption:	<60 Watts
Operating Temperature Range:	-40°C to +50°C
IP Rating:	IP66

*applicable to a basic node

For more information about Airspan, its products and solutions, please visit our web site:

www.airspan.com

or email:

sales@airspan.com

Airspan has sales offices in the following countries

- Finland
- Poland
- Russia
- United Kingdom
- United States
- Australia
- India
- Indonesia
- Japan
- Philippines
- Sri Lanka

Headquarters

777 Yamato Road, Suite 310
Boca Raton, Florida 33431
USA

A-AS-0211

About Airspan

With over 500 customers in over 100 countries and as a top vendor for carrier-class broadband wireless solutions, Airspan is recognized as a leader and pioneer in 4G and broadband wireless technologies.

Providing an expansive product portfolio, Airspan offers customers the widest selection of 4G products in the industry with an unsurpassed level of technology to benefit their business case. Airspan has solutions spanning the 700 MHz to 6 GHz frequency bands.

Contact Airspan today!

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