

AirSynergy 1000

Indoor LTE-Advanced Enterprise Femto Base Station
with optional Wireless Backhaul



Multi-Function, High Performance and Economic
Extending LTE-Advanced Public Access to the Enterprise



AirSynergy

**The world's
highest
performance
LTE-Advanced
Enterprise Femto**



Addressing unprecedented mobile data traffic growth



Mobile Carriers are currently experiencing an unprecedented growth in mobile data traffic, which today's 3G and 4G LTE networks are struggling to satisfy.

As part of a heterogeneous network, Public Access Enterprise Femto cells are a key tool for locating the eNodeB closer to the end user, providing much higher aggregate data rates and better coverage.

The issue with most Public Access Enterprise Femtos is the difficulty in connecting them with the rest of the Macro network. AirSynergy 1000 solves this problem by combining a 4G LTE-Advanced eNodeB Station with an optional, high capacity, self-connecting wireless backhaul.

Integrating and Synchronizing

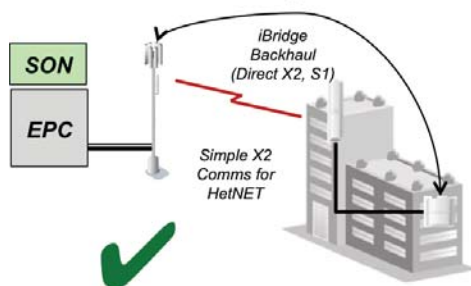
AirSynergy 1000 contains Airspan's ground breaking LTE-Advanced Software Defined Radio (SDR) is implemented within a state-of-the-art System on a Chip technology providing both data access and backhaul from the same architecture. AirSynergy is a high compact all-in-one eNodeB which supports a wide range of radio interfaces including 4G LTE-Advanced and IEEE 802.11 and 802.16 technologies.

A holistic solution for both Public Access and high capacity backhaul is an industry first, and redefines the way in which LTE-Advanced can be delivered into the Enterprise.

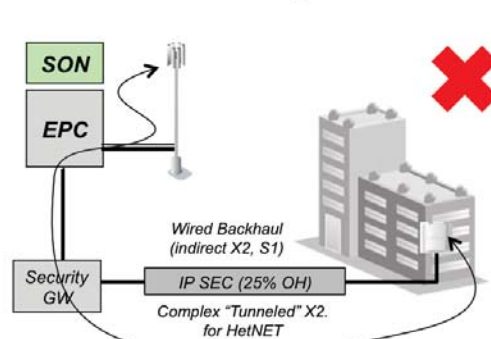
This architecture enables AirSynergy 1000 femto cells to be deployed quickly into the Enterprise by delivering both high capacity backhaul and synchronization, essential for integration with the Macro cell network.

In addition to LTE-Advanced Public Access, AirSynergy 1000 also provides IEEE 802.11n/ac Public Hotspot 2.0 services which are tightly coupled with the LTE interface and share the same hardware based SIM authentication methods used on today's Smartphones and Tablets. When combined with novel access network discovery and selection function (ANDSF) the result is a revolution in the way a carrier can provide services to today's enterprise.

Direct X2 Integration



Indirect X2 Integration



RELEASE 10 LTE-ADVANCED

AirSynergy 1000 is a revolutionary indoor, high performance, high power, LTE-Advanced Enterprise Femto cell, designed to bring Public Access LTE networks to large enterprises. AirSynergy 1000 has advanced Release 10 feature sets that include support for SON and eICIC which enables N=1 frequency re-use with outdoor Macro and Pico cells. AirSynergy 1000 can be deployed using enterprise broadband connections or with an optional broadband wireless backhaul solution that has cooperative QoS to ensure the Quality of Experience (QoE) inside of the enterprise matches the QoE on the outdoor Macro cell network.

THE POWER OF INDOOR HETNETS

4th generation mobile cellular networks have different problems than previous 2G and 3G networks. 4G LTE mobile networks are full of hotspots where large numbers of users make demands for mobile data that Macro-only networks are failing to provide. AirSynergy 1000 is designed to solve this "Hotspot" issue by bringing cost effective LTE-Advanced Public Access into the enterprise.

LTE-ADVANCED ACCESS

AirSynergy 1000 supports 3GPP LTE access technologies in combination with Airspan's intelligent IEEE wireless backhaul technology, known as iBridge. Airspan's 3GPP LTE implementation is compliant with the 3GPP standards and has interoperable S1 and X2 interfaces,

and fully supports commercial GCF tested UE devices, including SmartPhones, Dongles and Tablet computers.

OPTIONAL WIRELESS BACKHAUL

AirSynergy 1000 uniquely provides a solution for the delivery of "trusted" high capacity wireless backhaul to the enterprise using Airspan's IEEE based iBridge backhaul technology. iBridge is a self-configuring, self-connecting point-to-multipoint backhaul solution, which automatically extends the reach of the Macro RAN backhaul network from existing Macro cell sites or other Points of Interconnect (POI). AirSynergy iBridge backhaul also provide high quality synchronization using IEEE PTPv2 by acting as a Grand Master for the enterprise deployed Femto cells. This ensures that both frequency re-use and handover works seamlessly with the Macro LTE-Advanced network.

ECONOMIC DEPLOYMENT

The high performance and high power LTE-Advanced radio interface of AirSynergy 1000 means that in most cases a single unit can provide coverage for a large building or even multiple buildings in a campus.

SIMPLE AND FAST TO DEPLOY

AirSynergy 1000 when combined with the optional iBridge wireless backhaul provides a "one-stop" solution for extending LTE and LTE-Advanced Public Access services into a large enterprise using the deployment of just two compact units.



PLUG AND PLAY

AirSynergy 1000 wall mounted Enterprise Femto cell(s) can be installed quickly into large enterprises, either as a single node or as a cluster of nodes. When deployed in clusters, the nodes are networked together using Gigabit ethernet links. The AirSynergy 1000 can be deployed using an integrated isotropic omni antenna, or with separate antennas via 2 N-type connectors.

REDUCING THE COST OF DELIVERING Mbit/s

The deployment of an AirSynergy 1000 Enterprise Femto cell with optional backhaul can massively reduce the cost of delivering Public Access broadband mobile data to the Enterprise. The location of a high performance Femto cell inside of the enterprise not only improves the Quality of Experience, by enabling fast downloads and better coverage, it simultaneously deloads the outdoor Macro cell network, improving the overall network quality for all users. Perhaps even more significant is that the cost for each Mbit/s delivered to users within the Enterprise drops dramatically, which permits carriers to create innovative pricing tariffs and generous data consumption allowances.

FLEXIBLE ARCHITECTURE

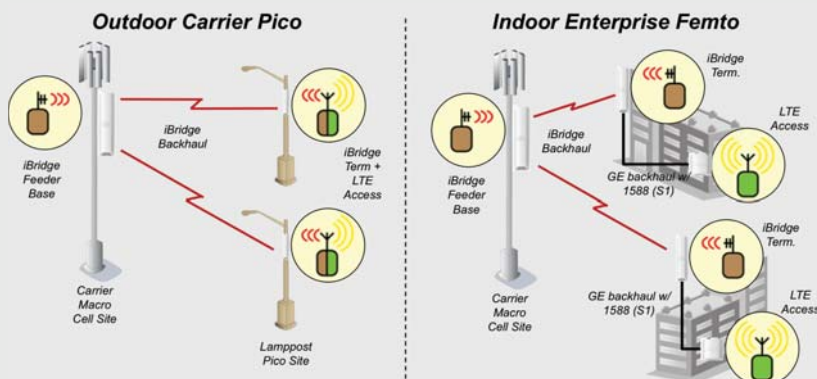
AirSynergy 1000 and 2000 support the holistic deployment of LTE-Advanced HetNets. By deploying both Indoor and Outdoor small cell topologies, carriers can create optimal small cell networks that solve both coverage and capacity shortfalls in the Macro cell network.

Through the use of Airspan's real-time SON Servers, LTE and iBridge backhaul does continual self-optimization of both LTE backhaul links, ensuring interference between is minimized and delivering end-to-end QoS and QoE across the network with minimal spectrum consumption.

RADIO PLANNING with SON

AirSynergy 1000 is designed to integrate with standardized LTE Access SON solutions. AirSynergy SON is layered and consists of both Integrated eNodeB SON technology, based on Qualcomm's UltraSON™ and a standardized SON interface (which support TR.69) for network based SON. When deployed using iBridge backhaul AirSynergy also integrates Backhaul SON into the LTE SON Framework. This allows a network to be optimized for both LTE access and Backhaul simultaneously without the need for extensive, formal planning.

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.



3GPP LTE-Advanced ACCESS SPECIFICATIONS

RADIO INTERFACE

Version:	Release 8,9 and 10 Feature Sets
Operational Frequency Bands:	Band 7 and 41 (2.6 GHz) Band 12, 13, 14 and 17 (700 MHz) Band 20 (800 MHz) Band 40 (2.3-2.4 GHz) Band 42 and 43 (3.4-3.8 GHz) Band 3 (1.7-1.8 GHz) Band 44 (700 MHz) Band 4 (1.7-2.1 GHz*) Band 25 (1.9 GHz*) Band 5 (850 MHz*) Band 1 (1.9-2.1 GHz*)
Duplex:	FDD & TDD
Max Channel BW:	20 MHz
Max Transmit Power:	+30 dBm per Tx
MCS Support:	Up to 64-QAM
Synchronization:	GNSS(GPS) & IEEE1588 PTPv2

KEY FEATURES

Advanced Antenna Techniques

- 2 x 2 MIMO: SM and TxD
- SU-MIMO
- MU-MIMO

System Features

- Inter-RAT Mobility
- RAN Sharing
- Automatic Neighbor Relation (ANR)
- eICIC, ABS and CRE
- Embedded SON

IEEE iBridge BACKHAUL SPECIFICATIONS

iBridge RADIO INTERFACE

Operational Frequency Bands:	Various (between 400 MHz and 6 GHz)
Duplex:	TDD
Interface:	Layer 2 Ethernet or internal
MIMO Streams:	IEEE 802.16 (2 x 2), 802.11 (3 x 3 or 4 x 4)
MIMO Modes:	Downlink and Uplink, Spatial Multiplexing & STC
IEEE Standard:	802.11 and/or 802.16 (both in Augmentation mode)
Max Channel BW:	10, 20, 40 and 80 MHz (160 MHz*)
Max Output Power:	Up to +30dBm per Tx
MCS Support:	Up to 256-QAM rate 5/6

*In Roadmap

IEEE Broadband Wireless ACCESS SPECIFICATIONS

WIDE-AREA RADIO INTERFACE: 802.16d and 802.16e

Operational Frequency Bands:	700 MHz to 6.4 GHz
Duplex:	TDD
MIMO:	2 x 2 with Matrix A & B
Max Channel BW:	10 MHz
Max Transmit Power:	+30dBm per Tx
MCS Support:	Up to 64-QAM rate 5/6

LOCAL-AREA RADIO INTERFACE: 802.11n and 802.11ac

Operational Frequency Bands:	2.4 GHz and 5 GHz
Duplex:	TDD
MIMO:	3 x 3 or 4 x 4
Max Channel BW:	20, 40, 80 and 160 MHz
Max Transmit Power:	+24dBm per Tx
MCS Support:	Up to 256-QAM rate 5/6

KEY FEATURES

IEEE 802.16

Adaptive MIMO, Band AMC
N=1 Frequency Reuse (FFR)
Seamless Handover
AES Encryption
EAP-TTLS & EAP-TLS Authentication
IP-CS and ETH-CS with Standalone Mode
Profile C interoperability with ASNGW

IEEE 802.11

Mutli-stream MIMO
Dual Band Operation
Multiple SSID / BSSID
Hotspot 2.0 (IEEE 802.11u)
Virtual "LTE UE" mode
ANDSF with LTE SmartPhones

PHYSICAL SPECIFICATIONS

eNode/BS Configurations:	Single, Dual and Triple RF Node Options 3GPP plus IEEE 802.11
Antenna Configurations:	X-Polar Omni X-Polar Smart Switching Directional X-Polar Sectored
Site Configurations:	Access (with or without iBridge Backhaul)
*Dimensions:	320 x 280 x 80 mm / 12.5 x 11 x 3.1 in.
*Weight:	4 kg / 8.8 lb
*Power Consumption:	<60 Watts
Operating Temperature Range:	-40°C to +50°C / -40°F to +122°F
IP Rating:	IP66 or IP67 (Optional)

*Single RF 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
- UAE
- South Africa

Headquarters

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AirSynergy 2000 rev. I

About Airspan

With over 1000 customers in over 100 countries and as a top vendor for carrier-class 3GPP and IEEE broadband wireless solutions, Airspan is recognized as a leader and pioneer in 3GPP and IEEE broadband wireless technologies.

Providing an expansive product portfolio, Airspan offers customers the widest selection of 4G LTE products in the industry with an unsurpassed level of technology to benefit their business case. Airspan has solutions spanning the 700 MHz to 6.4 GHz frequency bands.

Contact Airspan today!

