



SMEC HeNB-GW LTE Small Cell Gateway



✓ Applications

- ✓ LTE HeNB Gateway
- ✓ 3GPP IPsec Gateway (SeGW)

✓ Feature Highlights

- ✓ HeNB gateway with Signaling(S1-MME) and/or Bearer(S1-U) traffic aggregation
- ✓ Integrated SeGW function
- ✓ X2 service broker (X2 handover between Macro eNB and HeNB)
- ✓ Separate signaling and bearer processing modules(overload protection)
- ✓ Hardware-based packet processing engines
- ✓ Scalable ATCA standard platforms
- ✓ Multi-tier redundancy ensuring carrier-grade 99.999% availability
- ✓ Proven interoperability with multi-vendor Smallcells and Mobile cores for easy integration into the Mobile operator's network

Great Things in Small Packages

Femto cells are compact and low-powered base stations including Femto cells, Pico cells, Micro cells and Metro cells. Femto cells are becoming main-stream for Mobile operators as part of their Heterogeneous network (HetNet) strategy.

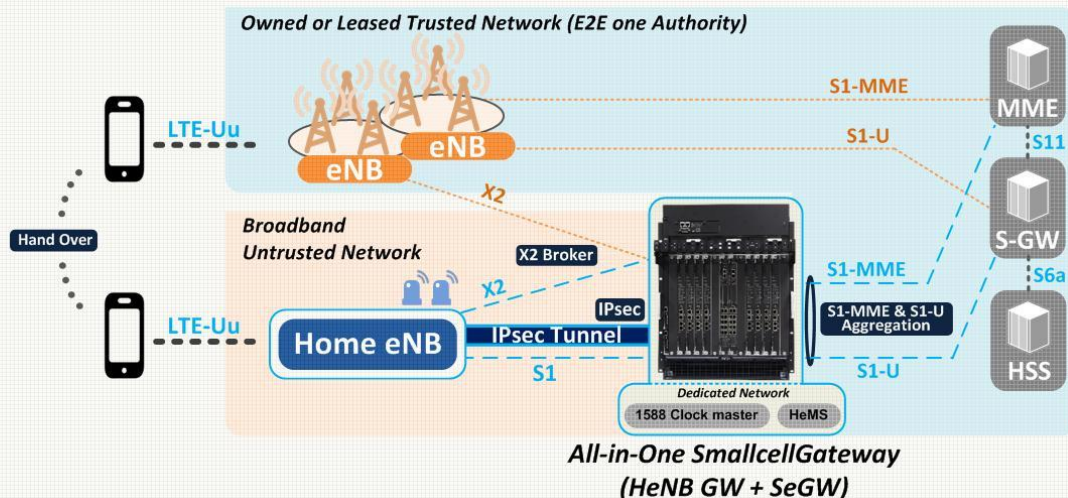
And as operators migrate their networks over to Long Term Evolution (LTE), the importance of coverage and capacity is only highlighted. Femto cells are a cost-effective solution for filling any gaps in coverage and quickly increasing capacity in high-density, high-traffic areas (such as airports, hotels and business/commercial centers).

At the same time, Femto cells bring a number of challenges, such as security vulnerabilities, the need to aggregate traffic from a large number of "mini" base stations, provisioning and maintaining base stations deployed in a wide area.

Introducing SMEC LTE Small Cell Gateway

The **SMEC LTE Small Cell Gateway(HeNB-GW)** is a high-performance integrated security gateway and aggregation solution that establishes encrypted IPsec tunnels to the HeNB while aggregating control and user traffic from hundreds of thousands of Femto cells and routing the traffic to the operator core.

Network Configuration



SMEC HeNB-GW

LTE Small Cell Gateway (SeGW integrated)

Performance and Hardware

The **SMEC LTE Small Cell Gateway(HeNB-GW)** is a high performance solution, offering dedicated security processors that offer high throughput performance. Available in a variety of standards-based AdvancedTCA (ATCA) chassis, the **SMEC LTE Small Cell Gateway(HeNB-GW)** can seamless scale up to Max 300 Gbps of throughput and over hundreds of thousands Femto cells.

As a NEBS3 compliant solution, it offers a fully redundant architecture assuring no single point of failure and enabling five nines (99.999%) high availability. And since every critical component is hot-swappable, operators are guaranteed uninterrupted service.

Benefits

By its unique feature, X2 Service Broker, **SMEC LTE Small Cell gateway(HeNB-GW)** is able to supports X2 handover between macro eNB and femtocell which ensures uninterrupted, reliable call quality, even during switches between the two cells - all just through 4G network (i.e. just through VoLTE) without 2G or 3G network. In addition, X2 Service broker feature can be provided without any impact or change on the legacy macro eNB to supports X2 setup and X2 handover with Femto cells.

Summary

The **SMEC LTE Small Cell Gateway(HeNB-GW)** helps to keep the impact of introducing LTE femtocell - even when massively deployed - in the legacy LTE network low, as low as that of small scale addition of macro eNB. This ensures the stability of the LTE core network remains unaffected and the additional investment costs resulting from such deployment are kept to a minimum.

Feature	Function	Description	* Optional Feature
Features	HeNB GW functionality	S1 / X2 signaling interface S1-U (GTP-U) bearer interface S1 / X2 handover HeNB Clustering(Virtual eNBs) X2 Service Broker Paging Optimizing for HeNB	
	SeGW Functionality	Integrated IKE/IPsec SeGW Packet routing between HeNB – HeMS/IEEE 1588 Dedicated physical interface for HeMS/IEEE 1588	
	IKEv2/IPsec	IKEv2 support / IPsec with ESP tunnels mode Anti-Replay and IKE DoS protection / Dead Peer Detection Client behind NAT / 3GPP Standard Cryptographic algorithm	
	Encryption	DES-CBC, 3DES-CBC, AES-CBC, AES-CTR, NULL	
	IKE Client Authentication	PSK/X.509/EAP-MD5/AKA/SIM/TTLS Dynamic PSK, RADIUS Certificates: X.509, OCSP DIAMETER for EAP authentication	
	QoS	DSCP based QoS enforcement	
	Routing	Static / OSPF / BGP / LAG Virtual routing and forwarding IPsec v6 / IPsec v4 over v6 / IPsec v6 over v4 support	
	Management	Command Line Interface, SNMP(v2/v3) Graphical User Interface with centralized EMS	

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