Apex™ Lifestyle Small Cell: Pebble
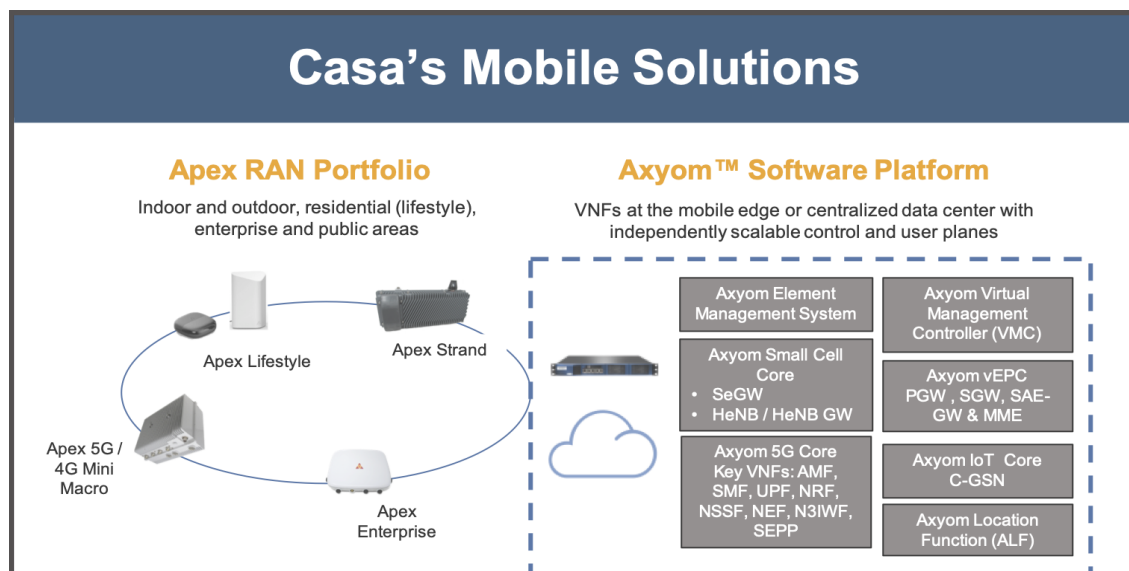
RAN Solution - Coverage / Capacity
LTE-FDD, LTE-TDD

Casa Systems' end-to-end small cell solution is designed to address coverage and capacity needs for today's mobile subscribers and use cases. Casa's Apex Radio Access Network (RAN) solutions include a range of small cells – Lifestyle, Enterprise, Strand and Micro small cells - to meet service providers' many different deployment requirements.

Casa's Apex Lifestyle Small Cells are designed to fit contemporary lifestyles and will not be hidden away in a closet. The color, shape, texture and accessory options will help service providers mitigate customer churn and even add revenues through accessory sales.   Casa's Lifestyle femtocells satisfy subscriber's residential coverage requirements. As the figure below shows, Apex Lifestyle Small Cells are part of Casa's overall Small Cell Solution. Other components of the solution include:

- The Axyom Element Management System (AeMS) - The AeMS provides real-time SON and Small Cell Gateway functions that reduce operational costs, speed time to market, and optimize the customer experience. An advanced GUI gives control over all small cell and small cell gateway parameters.

- The Axyom Small Cell Gateways - aggregation of control and user plane traffic and capabilities necessary to manage large clusters of small cells.

- The Axyom Virtual Management Controller - VNF management and integration.

- The Axyom Location Function - real-time small cell location information which is critical in some countries to support emergency services.

casa systems

Technical Specifications

GENERAL	
Max TX Power	20 dBm (2 streams @17 dBm), 100 mW
Antenna Configuration	2 x 2 MIMO DL, UL Rx diversity (2 Tx /2 Rx)
Antennas	3 Internal Antennas
Network Listen	1700-2100 MHz, 2500 -2700 MHz
BW Channelization	5, 10, 15, 20 MHz
Interfaces	LTE: S1-U, S1-MME, X2
Backhaul Options	10/100/1000 Gigabit Ethernet, RJ-45, Wi-Fi Backhaul Option Available
Synchronization	GPS antenna

PHYSICAL AND ENVIRONMENTAL	
Dimensions	168mm x 168mm x 58mm
Weight	450 Grams
Nominal Power Consumption	< 7.5W at full capacity
Power	12 VDC@1.5A, power supply @ 110 / 220 VAC
Protection	IP40

FREQUENCY BANDS	3, 4, 7, 38, 40, or 41 - additional bands and band combinations upon request

CAPACITY	
Max. Data Throughput	150 Mbps DL / 50 Mbps UL
Max. Simultaneous Active Users	RRC Connected users: 16
	Scheduled Users / TTI: 2

RADIO ACCESS TECHNOLOGY	LTE 3GPP Release 12

OTHER FEATURES	Access control: Open, Hybrid or Closed access
Advanced Feature Support	Timing / Phase synchronization; OTA, IEEE1588v2, GNSS
	CMAS (Commercial Mobile Alert System)
	ETWS (Earthquake and Tsunami Warning System)
	ICIC (Inter-Cell Interference Coordination)
	LIPA (Local IP Access Breakout)
	SIPTO (Selective IP Traffic Offload)
	Voice: CSFB and VoLTE
Security Features	IPSEC: AES, 3DES
	PKI: IKEv2 key management, certificate-based authentication (x.509)
	Secure boot

Technical Specifications

Axyom Small Cell Manager	**OAM&P** • H(e)MS small cell management system functions (3GPP TS 32.592 and TS 32.593) • TR-069 Auto-Configuration Server (with TR-196v2 and TR-181 Data Model Support) • KPI Management standard KPI definition (TS 32.453), custom KPI definition support • Fault Management 3GPP TS 32.111-2 Alarms (IRP/IS) • Syslog Server • X2 Gateway **SON** Self-optimization • Mobility load balancing (MLB) • Mobility robustness optimization (MRO) • Capacity and coverage optimization (CCO) • RACH optimization • Energy saving Self-healing • Automatic cell outage detection • Software recovery Self-configuration • Automatic Neighbor Relation (ANR) • Physical Cell Identity (PCI) autoconfiguration • Radio Environment Management (REM) • S1/X2 autoconfiguration • RACH channel self-configuration • Channel Selection • Transmission Power Management • Optical Cluster Configuration
Supported Services	Supported services include: • LIPA: Local IP Access with a Local GW included in the eNB subsystem supported for providing edge & local offloading • SON: Hybrid SON support with dSON and cSON; dSON agent can work with or without cSON and supports using a real-time interface through X2 or TR-069; SON macro integration supported through X2-GW, X2-Proxy or direct connection • TR-069: TR-069 agent supports TR-196v2 and TR-181 data models