Data Sheet

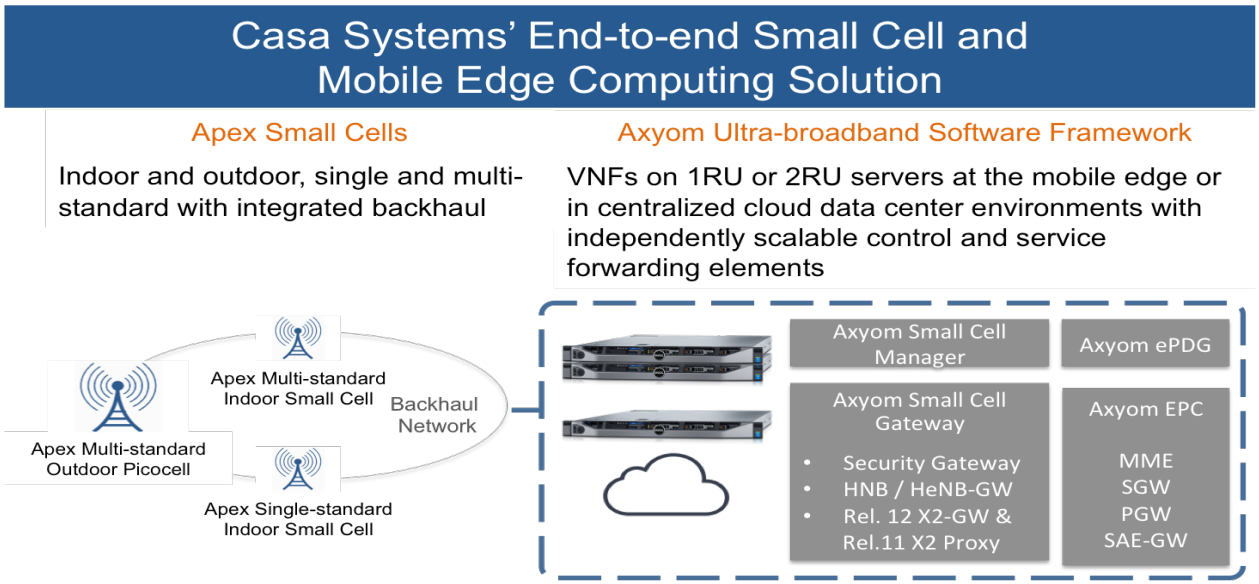
Apex Multi-Standard Indoor Small Cell

Coverage / Capacity + Monetization

LTE-FDD, LTE-A, 3G-HSPA+, 3.5 Ghz CBRS, 5GHz LAA, MulteFire™

Casa Systems' end-to-end small cell solution is designed to address the need for mobile network coverage and capacity for today's subscribers and use cases, and to ready the network for 5G . Casa's solutions include a range of Apex small cells – indoor and outdoor, residential and enterprise, multi-standard and 4G only - to meet service provider evolving needs. Casa's Axyom small cell gateways with integrated security also act as X2 gateways and provide the scale, intelligence, and deployment flexibility needed for mobile edge computing and 5G use cases. Deployable at the edge on a 1RU / 2RU COTS x86 server, or as independently scalable control and service forwarding elements at a centralized location, Casa's mobile access solutions enable a range of new use cases, including location insight, Private LTE, and distributed security for the IoT. The Axyom Small Cell Manager provides H(e)MS and real-time SON functions that reduce operational costs, speed time to market, and optimize the customer experience.

Casa's Apex Multi-Standard Indoor small cell is designed for environments where a diversity of UEs are present, such as enterprises and public venues like malls and airports. A zonal presence / location insight API enables new monetization opportunities for service providers. The Apex Multi-Standard Indoor Small Cell cost-effectively supports deployed radio access technologies: LTE and 3G, new feature updates based on the 3GPP release roadmap, and has the flexibility to support LTE-A, 5GHz LAA, 3.5Ghz CBRS and MulteFire™.



casa systems

Technical Specifications

Radio Access Technology Support	LTE-FDD: R9 with feature support from R10, R11, R12 3G-HSPA+ (R7), R99 CS/PS
Max. Power Output	Up to 250 mW per radio
Max. Data Throughput	LTE-FDD: 150 Mbps DL / 50 Mbps UL 3G-HSPA+: 21 Mbps DL / 5.76 Mbps UL
Max. Simultaneous Active Users	32 LTE-FDD + 32 3G-HSPA+ simultaneous users LTE_FDD: up to 8 DL/UL UE's scheduled per TTI 128 RRC Connected Users
Band Support	LTE-FDD band: 1,3, 4, 7. 3G-HSPA+ bands 1,2 3.5GHz (CBRS), 5GHz (LAA, MulteFire™) Additional band support option. Flexible 3G / LTE band combination support.
Antenna Configurations	LTE-FDD: 2x2 MIMO DL, UL Rx diversity (2Tx/2Rx) 3G-HSPA+; SISO DL, UL, Rx diversity (1Tx 2Rx)
Backhaul Options	GigE; support options for additional backhaul options e.g. VDSL2
Interfaces	3G: Iuh LTE: S1-U, S1-MME, X2
Additional Protocol Support	LTE-A, (CA), 5GHz LAA, 3.5 GHz CBRS and MulteFire ™ via hardware / software upgrade
Advanced Feature Support	Access control: open, Hybrid or Closed access 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-196 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 organization • Energy saving Self-healing • Automatic cell outage detection • Software recovery Self-configuration • Automatic Neighbor Relation (ARO) • Physical Cell Identity (PCI) autoconfiguration • Radio Environment Management (REM) • S1/X2 autoconfiguration • Primary Srambling Code (PSC) autoconfiguration • LAC (Location Area Code) / RAC (Routing Area Code) • Common pilot channel (CPICH) maximum power setting
Dimensions	204mm x 132mm x 29.8mm
Weight	350 Grams
Power	<16W at full capacity