cnPilot

Use Cases across Home, Enterprise Indoor & Outdoors

Sept. 2015

Roadmap may change based on business needs
Vision and Mission

affordable, scalable, quick to deploy, easy to operate with intelligent remote diagnostics.

For Outdoors, Indoors, Public hotspots, Industrial and Indoor Enterprises
Cambium WiFi Focus - Service Provider

SP Managed Enterprises

SP Managed Home

Target Market
Service Provider Managed Homes, Small Enterprises, Public Hotspots, Industrial

13% CAGR

21% CAGR

9% CAGR

Enterprise

Service Provider

Home WiFi

Solutions in the Market Today

1. Expensive and Complex: made for the large enterprises
2. Inexpensive: lacking in scalability, manageability and reliability

Need for Svc Provider

• Quick to Deploy
• Easy to Manage
• Scalable
• Reliable and Affordable

Cambium’s WiFi Solution

✓ Zero Touch Deployment
✓ Easy Remote Manageability
✓ Cloud Managed with Very High Scalability
✓ Reliable and Affordable End to End Wireless

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“End-to-End Wireless” – From 200 Km to 20 m Under one roof

Planning
Network Management
Inventory Management
WiFi Controller
Support & Warranty Services

cnMaestro: Complete Network Lifecycle Management

Cloud Manager

On-premise (NOC) Network Manager

Long Distance: PTP 650, 820

Point to Point

Distribution Access: PMP 450, ePMP

Point to Multipoint

Edge Access: cnPilot

802.11n, 802.11ac Indoor & Outdoor

Home + Small Business

Outdoor
- Single Band
- Dual Band

Indoor

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cnPilot™ Portfolio (2015)

R200, R201
Home & Small Business Indoor
802.11n and 802.11ac
Single & Dual band routers

ePMP™ 1000 Hotspot
Enterprise class Outdoor
Single band 802.11n

E400
Enterprise class Indoor
Dual band 802.11ac

E500
Enterprise class Outdoor
Dual band 802.11ac

cnMaestro - Cloud based manager and WiFi Controller
Use Cases
Frictionless Deployment: cnPilot + CnMaestro

Claim Devices with Serial Number
Enter the Serial Numbers of the devices you would like to add to your account (one per line).

34564567, 12367490, 1298620986, 5285296

Setup Config and s/w Ver.
Onboarding Queue
The onboarding queue holds devices before they are added to your account. Devices must be approved in order to complete the onboarding process.

Device Details
Serial Number: 34564567
Status: Waiting

Device Details
Serial Number: 12367490
Status: Waiting

Device Details
Serial Number: 1298620986
Status: Waiting

Device Details
Serial Number: 5285296
Status: Waiting

Select Device Type: All

Auto Registration
Config & Upgrade

Device Details
Serial Number: 34564567
Status: Waiting

Device Details
Serial Number: 12367490
Status: Waiting

Device Details
Serial Number: 1298620986
Status: Waiting

Device Details
Serial Number: 5285296
Status: Waiting

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Personalization the easy better way

Café or Home Subscriber

cnPilot Access Points

cnMaestro

Admin Portal

RESTful API

Operator Web Page

1. APIs to integrate with Operator branded portal
2. Operator branded Page: offers personalization, and easy Management for users

Daily Operations
- Analytics
- Troubleshooting

Subscriber Operations
- Usage Accounting
- Policies

Warranty Operations
- Warranty, Support, Licensing

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Troubleshooting the last Wireless leg

Preloaded Status of all the component of end to end network - from mobile device having problem to the backhaul

Remote Packet Capture and RF analysis tools

Easily identify the mobile device through their names and manufacturer
Features for Retail Deployment

Key Specs

- 256 users (2.4, 5 GHz)
- 16 SSIDs for Employees & Retail Customers
- Secure (WPA2) encrypted SSIDs
- VLAN mapped SSID for subscriber traffic separation
- Rate limiting per user, per SSID, Time limit options
- Rogue AP detection*
- cnMaestro Hostpot hosting*
- 3rd party portal interworking
- Onboard AP hotspot portal (Controller-less option)
- Credential Caching for fast roaming
- Band Steering & load balancing*

* Roadmap

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Key Specs

- APs can be powered from central PoE switch
- SSIDs for Students, Administrators, Teachers (16 SSIDs)
- Secure (WPA2) or Open SSIDs
- VLAN mapped SSID for traffic separation
- Rate Limit student traffic
- Turn on “student SSID” on weekdays 8 AM – 5 PM
- Band steering, load balancing for managing overloaded APs*
- Host splash page on controller*
- Onboard AP hotspot portal (Controller-less option)
- Seamless roaming via credential caching on cnMaestro
- Roam Indoor (E400) and Outdoors (E500*)
- AAA (RADIUS). Roadmap: LDAP

* Roadmap
Wireless Meshing

For quick install: WiFi Meshing

- One-Hop Mesh
- Mesh:
  - Indoor – Indoor
  - Indoor-Outdoor
  - Outdoor-Outdoor
- User caching across Indoor to Outdoor (1000 users)

OR

- Use Cambium ePMP or PMP450 PTP/PMP for reliable backhaul
The alternative Option: Better than Wi-Fi Meshing

PMP 450 AP

PMP 450 SM

E500 WiFi Hotspot

Compared to WiFi Mesh

- Longer Distances
- Less Interference - directional transmission
- Smaller bandwidths than traditional mesh
- High Frequency re-use
- Lower latency

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cnPilot – Connecting the Unconnected

Manager, WiFi Controller

One Vendor for WiFi + Backhaul
- Long/Medium distance backhaul
- WiFi Meshing
- WiFi Access Points

cnMaestro – One Manager
- Single View
- Coordination between Backhaul + Access
- Troubleshooting

Public WiFi
- Rate Limiting per SSID; per user
- Multiple SSIDs
- 3GPP AAA; RADIUS EAP-SIM, WISPr1.0
- Band Steering, Load Balancing
- Auto channel selection
- Airtime fairness*
- Auto Transmit power control*
- Hotspot 2.0*

* Roadmap
One SSID, multiple Locations, Increased brand presence

- Community SSID = All around WiFi service availability, Customer sat., Brand presence
- Prioritized Owner access*; Rate limiting for public SSID clients; VLAN separation
cnPilot™ Portfolio (2015)

- **Home & + Small Business**
  - R200, R201

- **ePMP™ 1000 Hotspot**

- **Enterprise Indoor E400**

- **Enterprise Outdoor E500**

- **cnMaestro – Manager & WiFi Controller**
E400 - Managed Indoor Enterprise Access Point

RF
- 802.11a/b/g/n/ac
- 2x2 MIMO
- 2.4/5GHz
- Max TX power = 25dB (2.4, 5 GHz)

Physical
- Dimensions: 180x180x 26-31mm
- Software controlled LED
- Operating Temp 0-45 C

Installation
- Installable shoes for table mount
- Detached back-plate for easy ceiling mount

Ports
- 802.3af PoE Gigabit

Security
- HTTPS, SNMPv3, Firewall, NAT, Client isolation
- Secure Configuration Store, Time based access

Guest Access
- Built-in Hotspot, third Party Hotspot
- Rate-limiting (per client/per WiFi)
- 802.1x, EAP-SIM/AKA
- Multiple AAA

WiFi
- VLAN Tagging per SSID
- WPA-TKIP, WPA2 AES, 802.11i
- Auto-channel selection, WMM
- 16 SSIDs, 256 Users

Management
- Cloud/NOC Management, Autonomous operation
- Quick troubleshooting
- GUI, SNMPv3, CLI

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Ceiling, wall, or desktop mount options
ePMP 1000 Hotspot – Managed Outdoor AP

Single band outdoor Enterprise class AP

Hardware
- 2 10/100 Ethernet ports
- Power Consumption: 5W (typical)/7W (max)
- Weight < 0.5 Kg. Dimensions: 30x15x9
- Certification: IP55
- Canopy PoE out PMP 450/ePMP
- Temperature rating: -30° C ~ + 60° C
- Single Band 802.11n [2.4, or 5 GHz]

Security
- HTTPS, SNMPv3, Firewall, NAT, Client isolation
- Secure Configuration Store, Time based access

Guest Access
- Built-in Hotspot, third Party Hotspot
- Rate-limiting (per client/per WiFi)
- 802.1x, EAP-SIM/AKA
- Multiple AAA

WiFi
- VLAN Tagging per SSID
- WPA-TKIP, WPA2 AES, 802.11i
- Auto-channel selection, WMM
- 8 SSIDs, 128 Users

Management
- Cloud/NOC Management, Autonomous operation
- Quick troubleshooting
- GUI, SNMPv3, CLI
Questions?