

# Cambium Swap - North America

## Technical Comparison & Replacement Guide

NA strategy: RADWIN / Tarana / Mimosa for sub-6 wireless; Altowav + Siklu by Ceragon for 60 GHz; TP-Link + Alta Labs for enterprise Wi-Fi; Ubiquiti + TP-Link for switching; Nokia preferred fiber; Ceragon + Intracom for licensed transport.

|           |                                                                                                                                                                                          |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Purpose   | Engineering and product-management companion to the 2-page sales cheat sheet.                                                                                                            |
| Use       | First-pass product selection, technical qualification and migration planning.                                                                                                            |
| Important | This is not a guaranteed one-for-one cross-reference. Validate spectrum, regulatory approval, topology, capacity, power, mounting, licensing and management requirements before quoting. |
| Software  | cnMaestro, LINKPlanner, cnHeat and Cambium QoE replacement strategy remains TBD.                                                                                                         |

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Executive technical strategy

- Fixed wireless: lead RADWIN for premium 5 GHz PtMP/PtP and interference-heavy RF; lead Mimosa for value 5/6 GHz WISP migration; use Tarana where NLoS, CBRS, capacity or service assurance justify premium economics.
- Enterprise Wi-Fi: TP-Link Omada is the primary general-purpose cnPilot replacement; Alta Labs is the second option; Ubiquiti remains an additional alternative. Nokia DAC Wi-Fi is an industrial/private-wireless option, not a generic campus substitute.
- Residential / ISP-managed Wi-Fi: Nokia Beacon + Corteca is preferred when the customer uses or is moving to Nokia PON. TP-Link Aginet is the alternate managed-home path.
- Switching: Ubiquiti Enterprise Campus / Pro is primary; TP-Link Omada Campus is secondary; Alta Labs fits access-layer/simple cloud-managed deployments, not core/aggregation-first designs.
- Fiber: Nokia Lightspan + Nokia ONTs is the preferred architecture. Fibrain/HALNy is secondary and useful for alternative OLT/ONT economics and pluggable ONU requirements.
- Transport: Ceragon is the primary licensed microwave / E-band path; Intracom adds licensed mmWave FWA and E-band alternatives. For unlicensed 60 GHz cnWave replacement, Altowav AltoPlex D621/C410/C420 is now a primary technical option, with Siklu by Ceragon retained as a strong alternative.
- IIoT: FreeWave is the closest private-radio / SCADA replacement for cnReach; Teltonika is an alternative when cellular/IP industrial gateways are acceptable.

Decision framework

| Question                                                                                    | Technical implication                                                      | NA / CALA action                                                     |
|---------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------|
| Is this a one-radio replacement or an access-platform migration?                            | PMP/ePMP AP and subscriber nodes are ecosystem-dependent.                  | Treat PtMP as a sector migration, not a single-SKU swap.             |
| Is spectrum licensed, CBRS, unlicensed 5/6 GHz, 60 GHz, or licensed microwave?              | Replacement family changes completely by band/regulatory regime.           | Qualify spectrum first; do not compare only headline throughput.     |
| Does the customer require sync, NLoS, interference immunity, SLA or deterministic capacity? | Value platforms may not preserve behavior under RF stress.                 | Escalate to RADWIN/Tarana/Ceragon where RF or SLA matters.           |
| Is Wi-Fi enterprise/campus or residential managed Wi-Fi?                                    | Controller, roaming, captive portal and ISP support workflows differ.      | Keep enterprise Wi-Fi separate from Nokia Beacon/Corteca home Wi-Fi. |
| Is fiber part of a long-term access architecture?                                           | OLT/ONT interoperability, OMCI profiles, controller/OSS and optics matter. | Prefer a tested OLT/ONT ecosystem, not only a matching PON acronym.  |

1. PMP 450 / ePMP fixed wireless replacement

The core technical choice is not simply Cambium model versus competitor model. It is a new access architecture. Compare spectrum, sector capacity, CPE economics, RF resilience, synchronization, tower integration and management before selecting the replacement family.

| Cambium family          | Operating context | Primary replacement       | Secondary / selective                      | Technical positioning                                                  | Key migration risk                                             |
|-------------------------|-------------------|---------------------------|--------------------------------------------|------------------------------------------------------------------------|----------------------------------------------------------------|
| PMP 450m - 3 GHz / CBRS | CBRS; dense PtMP  | Tarana G1/G2 - 3 GHz CBRS | RADWIN JET 3.5 GHz - regulatory validation | Best where interference/NLoS/capacity matter; premium economics.       | CBRS authorization, SAS, CPE replacement and sector economics. |
| PMP 450m - 5 GHz        | Dense 5 GHz PtMP  | RADWIN JET DUO / JET PRO  | Tarana G1/G2; Mimosa A6                    | RADWIN emphasizes beamforming/interference immunity; Mimosa emphasizes | Full AP/SM migration; validate sync/co-location behavior.      |

| Cambium family           | Operating context         | Primary replacement      | Secondary / selective                         | Technical positioning                                                        | Key migration risk                                           |
|--------------------------|---------------------------|--------------------------|-----------------------------------------------|------------------------------------------------------------------------------|--------------------------------------------------------------|
|                          |                           |                          |                                               | multi-gig value.                                                             |                                                              |
| PMP 450v - 5/6 GHz       | Modern high-capacity PtMP | Tarana G2 multi-band     | Mimosa A6 / RADWIN 5 GHz                      | 6 GHz is a strong Mimosa/Tarana discussion; 5 GHz has broader choices.       | 6 GHz AFC/regulatory rules; replacement CPE and link budget. |
| PMP 450i / MicroPoP      | 3/5 GHz; compact sites    | RADWIN JET / MultiSector | Mimosa A6                                     | Choose based on density, tower space and RF environment.                     | Mechanical/power/tower redesign; sector pattern changes.     |
| ePMP 4500 / 3000 - 5 GHz | WISP value / scale        | Mimosa A6 + C6/C6x       | RADWIN JET                                    | Mimosa A6 up to 4.5 Gbps aggregate; C6x up to 1.75 Gbps PtMP / 2.0 Gbps PtP. | CPE economics; management change; channel plan.              |
| ePMP 4600 - 6 GHz        | 6 GHz PtMP                | Mimosa A6 + C6/C6x       | Proxim Stratum / region-specific 6 GHz option | A6 supports 5.15-7.125 GHz hardware range and up to 160 MHz bandwidth.       | AFC availability and local 6 GHz rules.                      |

Reference points: Mimosa A6 publishes up to 4.5 Gbps aggregate capacity across 5.15-7.125 GHz; C6x supports PtMP and PtP and up to 2.0 Gbps aggregate in PtP. RADWIN positions JET PRO/DUO for mid/high-density carrier FWA and interference-heavy environments. Tarana G1/G2 covers 3/5/6 GHz variants, with RNv positioned for lower-cost deployments.

## 2. Sub-6 GHz point-to-point and bridge replacement

For PTP 450/550/670 and 5 GHz Bridge-in-a-Box, compare aggregate throughput, frequency flexibility, latency, antenna options, interference handling, sync/co-location needs and management. Avoid treating PTP 700 secure/defense use cases as a generic commercial link replacement.

| Cambium               | Primary                  | Secondary                                                      | Published / practical differentiator                                            | Best fit                                         | Qualification notes                                               |
|-----------------------|--------------------------|----------------------------------------------------------------|---------------------------------------------------------------------------------|--------------------------------------------------|-------------------------------------------------------------------|
| PTP 450i / 450b       | RADWIN 2000E / Alpha PRO | Mimosa B6x / C6x                                               | RADWIN 2000E is positioned up to 2.5 Gbps; Mimosa B6x up to 3.0 Gbps aggregate. | Commercial sub-6 backhaul and enterprise access. | Validate exact band, antenna gain, channel size and local EIRP.   |
| PTP 550 / 670         | RADWIN 2000E             | Mimosa B6x                                                     | B6x operates 5.15-6.425 GHz and supports modular 8-30 dBi antenna options.      | High-capacity WISP backhaul.                     | Availability/resilience features may differ from Cambium PTP 670. |
| 5 GHz Bridge-in-a-Box | RADWIN 2000E / Alpha PRO | Mimosa B6x/C6x                                                 | Use same-vendor radio pair; pre-engineer link budget and mounting.              | Campus / building bridge.                        | Do not promise turnkey equivalence without accessory/power BOM.   |
| PTP 700 / secure      | No automatic substitute  | RADWIN / Ceragon / specialist vendor after requirements review | Security certification, frequency and mission profile drive selection.          | Government / public safety / defense.            | Engineering escalation required.                                  |

### 3. 60 GHz cnWave and mmWave FWA

Separate unlicensed 60 GHz PtP/PtMP replacement from licensed 24/26/28 GHz FWA. Weather/rain fade, distance, topology and installation density are more important than headline PHY rate. Altowav D621 is a current 57-66 GHz PtP/PtMP distribution/client radio with up to 3.8 Gbps aggregate capacity, 2.5GbE, sub-1 ms latency, integrated beamforming, and support for up to 15 client nodes per distribution radio; C410/C420 are dedicated client nodes used with D621.

| Cambium                  | Band / use                | Primary                  | Secondary                                   | Technical use case                                                                                                            | Risk                                                                          |
|--------------------------|---------------------------|--------------------------|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| cnWave V5000 + V1/2/3000 | 60 GHz PtMP / mesh        | Altowav AltoPlex D621    | Siklu by Ceragon MultiHaul TG               | Dense short-range 60 GHz PtMP distribution; D621 supports PtP/PtMP, 57-66 GHz, up to 3.8 Gbps aggregate and up to 15 clients. | Validate range, rain zone, client count, topology, 2.5GbE handoff and PoE.    |
| 60 GHz Bridge-in-a-Box   | 60 GHz PtP                | Altowav D621 + C420/C410 | Siklu by Ceragon EtherHaul / MultiHaul pair | 60 GHz PtP / bridge; D621 can operate as distribution or client, while C410/C420 are dedicated client nodes.                  | Clear LOS, mounting precision, range and Ethernet handoff must be engineered. |
| cnWave 5G Fixed          | 24/26/28 GHz licensed FWA | Nokia FastMile / RAN     | Intracom WiBAS G5                           | 3GPP carrier FWA or licensed mmWave operator access                                                                           | Spectrum licensing, core/RAN architecture, CPE cost.                          |

### 4. Licensed microwave and E-band

Cambium PTP 820/850 replacement should be engineered by frequency, channel plan, modulation, availability target, protection mode, XPIC, IDU/ODU architecture and sync needs. This is one of the areas where a formal link design is mandatory.

| Cambium                         | Primary                   | Secondary                                           | Technical direction                                                                                                                                          | Notes                                                                      |
|---------------------------------|---------------------------|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| PTP 820S/C, 850C/CX - 6-42 GHz  | Ceragon IP-50CX           | SIAE ALFOplus2 / Intracom OmniBAS where appropriate | All-outdoor / compact licensed microwave; preserve carrier-class QoS and availability design.                                                                | Validate licensed band SKUs, ACM, XPIC, protection and Ethernet/TDM needs. |
| PTP 820A/F, 850GP               | Ceragon IP-50GP / IP-50FX | SIAE / Intracom aggregation architecture            | Indoor aggregation / protected hub designs.                                                                                                                  | Review rack, power, RFU and redundancy architecture.                       |
| PTP 820E, 850EX family - E-band | Ceragon IP-50EX family    | Intracom UltraLink GX80/XR80; SIAE ALFOplus80HD     | High-capacity 70/80 GHz transport. Intracom positions GX80 up to 10 Gbps full-duplex in current BEAD collateral and announced higher-capacity GX80 Advanced. | Rain-zone availability and antenna size can dominate design.               |

## 5. Enterprise / campus Wi-Fi

Do not mix enterprise/campus Wi-Fi with ISP home Wi-Fi. Enterprise replacement must consider form factor, client density, 6 GHz availability, roaming, controller model, captive portal, VLAN/security integration and multi-site operations.

| Cambium class        | Primary                                 | Second option             | Additional option                        | Technical guidance                                                                                                             |
|----------------------|-----------------------------------------|---------------------------|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Cambium X7 Wi-Fi 7   | TP-Link Omada EAP787 / EAP772 / EAP773  | Alta Labs AP7-Pro         | Ubiquiti E7/U7                           | TP-Link provides ceiling, wall and outdoor Wi-Fi 7 under Omada; Alta is the second path for simpler cloud-managed deployments. |
| XV2 indoor Wi-Fi 6   | TP-Link Omada Wi-Fi 6/7                 | Alta Labs AP6 / AP6-Pro   | Ubiquiti U7; Nokia DAC for industrial    | Match client density and uplink speed; controller migration is part of project.                                                |
| XE3-4 Wi-Fi 6E       | TP-Link Wi-Fi 7 upgrade path            | Alta Labs AP7-Pro         | Ubiquiti E7/U7                           | Prefer Wi-Fi 7 rather than recreating a 6E-only design unless project requires 6E specifically.                                |
| XV3/XES high density | TP-Link EAP787/EAP783                   | Alta Labs AP7-Pro         | Ubiquiti E7 Audience                     | For very high-density venues, verify client scale, radio design and switching uplinks.                                         |
| XV2-22H wall plate   | TP-Link EAP775-Wall / EAP725-Wall       | Alta Labs AP6W            | Ubiquiti U7 In-Wall                      | Hospitality / MDU form factor.                                                                                                 |
| XV2-23T / outdoor    | TP-Link EAP775-Outdoor / EAP725-Outdoor | Alta Labs AP6-Pro Outdoor | Ubiquiti E7 Campus; Nokia DAC industrial | Outdoor enterprise/campus. Nokia DAC only where industrial/private-wireless architecture is relevant.                          |

Alta Labs note: AP7-Pro/AP6/AP6-Pro/AP6W/AP6-Pro Outdoor are managed through Alta cloud/controller options. Alta also offers an S24-PoE access switch with 24 GbE ports, 16 PoE+ ports, two SFP+ uplinks and a 240 W PoE budget; this makes Alta a coherent second-stack option for access-layer projects, but not the preferred campus core/aggregation platform.

## 6. Residential / ISP-managed Wi-Fi

Cambium RV22/home-managed use cases should be qualified separately from enterprise cnPilot. The key requirement is service-provider visibility, remote diagnostics, mesh optimization, standards support and integration with the access network.

| Cambium use               | Primary                | Secondary      | Technical rationale                                                                                                                 | Commercial note                              |
|---------------------------|------------------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| RV22 / managed home Wi-Fi | Nokia Beacon + Corteca | TP-Link Aginet | Nokia Beacon 4/9/19/24 cover Wi-Fi 7 tiers; Corteca provides ISP management and standards-based TR-369/TR-181/EasyMesh positioning. | Strongest when paired with Nokia PON / ONTs. |

## 7. Switching

cnMatrix replacement should be split into access, multigig PoE, aggregation/core and tower/WISP switching. A cloud-managed access switch is not automatically a replacement for an L3 aggregation design.

| Cambium class                 | Primary                                       | Secondary                            | Additional                                             | Engineering focus                                                                                                                                      |
|-------------------------------|-----------------------------------------------|--------------------------------------|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| EX2000 access                 | Ubiquiti Pro / Enterprise access              | TP-Link Omada access/campus          | Alta Labs S24/S48 for simpler access<br><br>-<br><br>- | PoE budget, 2.5/10G uplinks, L2/L3 feature set and controller model.                                                                                   |
| EX3000 multigig / aggregation | Ubiquiti Enterprise Campus / Aggregation      | TP-Link S6500 / S7500 Campus         |                                                        | Ubiquiti current Enterprise Campus includes 25/100G aggregation, stacking and MC-LAG on selected models; TP-Link S6500/S7500 is secondary campus path. |
| TX1000/TX2000 tower           | Ubiquiti UISP Switch where passive-PoE/DC fit | Engineered tower switch/power design |                                                        | Must validate 27V passive PoE, DC plant, sync and environmental needs.                                                                                 |

## 8. Fiber / PON

PON replacement requires more than GPON/XGS-PON line-rate matching. Validate OLT scale, uplinks, PON coexistence, OMCI profiles, ONT interoperability, Wi-Fi integration, management, OSS/BSS integration, optics and support lifecycle.

| Cambium class                   | Primary                                   | Secondary                                      | Technical rationale                                                                         |
|---------------------------------|-------------------------------------------|------------------------------------------------|---------------------------------------------------------------------------------------------|
| Cambium combo GPON/XGS-PON OLT  | Nokia Lightspan FX/MF                     | Fibrain V5908XC / V6016XC                      | Nokia preferred for carrier-grade roadmap, scale and integrated access/home Wi-Fi strategy. |
| Indoor/outdoor GPON/XGS-PON ONT | Nokia ONT portfolio                       | HALNy by Fibrain                               | Keep OLT/ONT ecosystem validated; use HALNy where economics/form factor fit.                |
| XGS-PON pluggable ONU           | Nokia standard ONT architecture preferred | HALNy HLX-SFPX where pluggable ONU is required | Pluggable ONU interoperability/OMCI must be lab-tested with target OLT.                     |

Nokia reference: Lightspan FX supports multiple PON technologies and scales from FX-4 to FX-16; Lightspan MF is positioned for 25G/50G PON evolution. Nokia Beacon/Corteca can extend the architecture into managed in-home Wi-Fi.

## 9. NSE security / gateway replacement

NSE 3000/4000 combines security, routing/SD-WAN and Cambium ecosystem functions. Any replacement needs to be scoped by throughput with security services enabled, WAN count, VPN, segmentation, high availability, logging and licensing model.

| Cambium  | Primary                                       | Secondary          | Fit                                                            | Technical note                                                                                                            |
|----------|-----------------------------------------------|--------------------|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| NSE 3000 | Ubiquiti UCG-Fiber / UXG-Fiber                | Fortinet FortiGate | Strong alternative, not strict clone<br><br>Strong alternative | Application-aware firewall, IDS/IPS, multi-WAN, VPN/SD-WAN; validate enterprise security feature depth.                   |
| NSE 4000 | Ubiquiti Enterprise Firewall / UXG-Enterprise | Fortinet FortiGate |                                                                | Ubiquiti Enterprise Firewall publishes 12.5 Gbps IDS/IPS; larger Enterprise Firewall Core reaches much higher throughput. |

## 10. cnReach / IIoT

cnReach is industrial telemetry/SCADA, not general broadband. Separate private narrowband radio replacement from cellular/IP gateway replacement.

| Cambium                        | Primary                       | Secondary                                        | Technical fit                                                                      | Key validation                                                                |
|--------------------------------|-------------------------------|--------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| cnReach N550 / narrowband IIoT | FreeWave ZumLink / FGR3 / LRS | Teltonika RUT/TRB when cellular/IP is acceptable | FreeWave has rugged 900 MHz and licensed narrowband/SCADA-oriented radio families. | Frequency, serial/Ethernet/I/O, DNP3/Modbus, latency, licensed-channel rules. |
| cnReach Terminal Server        | Teltonika RUT/TRB             | FreeWave edge/gateway options                    | Serial/industrial protocol gateway modernization.                                  | Protocol support, cellular coverage, remote management/security.              |

## 11. Software / management

Per current strategy, do not commit a replacement for Cambium software platforms yet. Hardware replacements will bring vendor-specific management, but there is no single approved cross-vendor substitute for the Cambium software layer.

| Cambium software                   | Status | Interim direction                                                                                     |
|------------------------------------|--------|-------------------------------------------------------------------------------------------------------|
| cnMaestro Essentials / X           | TBD    | Use each selected vendor platform for device management; define cross-vendor NMS strategy separately. |
| LINKPlanner                        | TBD    | Use vendor planning tools per technology during engineering; no single approved substitute yet.       |
| cnHeat                             | TBD    | Coverage/planning replacement to be evaluated.                                                        |
| Cambium QoE / subscriber assurance | TBD    | Evaluate subscriber analytics/QoE independently from hardware swap.                                   |

## 12. Validation checklist before sales commits

The technical guide is intentionally broader than the 2-page cheat sheet. Before quoting a replacement, use the checklist below.

| Area          | Validate                                                                                                |
|---------------|---------------------------------------------------------------------------------------------------------|
| RF / spectrum | Country rules, AFC/SAS, channel bandwidth, EIRP, DFS, licensed coordination, sync/co-location.          |
| Capacity      | Realistic sector/link throughput under target modulation; oversubscription; client count; latency; QoS. |
| Migration     | AP/SM ecosystem compatibility; truck rolls; phased migration; customer CPE economics.                   |

| Area      | Validate                                                                                                    |
|-----------|-------------------------------------------------------------------------------------------------------------|
| Physical  | Mounts, wind load, pole space, antenna, cabling, PoE/DC input, grounding, surge, environmental rating.      |
| Switching | PoE standards/budget, multigig ports, uplinks, L2/L3, redundancy, stacking/MLAG, optics.                    |
| Wi-Fi     | Controller/cloud model, licensing, client scale, roaming, captive portal, VLAN, 802.1X, 6 GHz availability. |
| PON       | OLT/ONT OMCI interoperability, optics, split ratio, reach, coexistence, uplinks, OSS/BSS and provisioning.  |
| Security  | IDS/IPS throughput with services on, VPN, SD-WAN, SSL inspection, HA, logging/compliance.                   |
| Support   | Regional stocking, RMA, training, escalation path, warranty, direct-vendor commercial status.               |

## Source references and validation notes

Primary references are current vendor product pages / datasheets checked in September 2026. Product availability, regional certification and feature licensing can change; revalidate at opportunity stage.

- S1 **Mimosa A6 / C6x / B6x product pages** | <https://mimosa.co/products>
- S2 **RADWIN JET / 2000E / Alpha PRO product portfolio** | <https://www.radwin.com/shop>
- S3 **Tarana G1/G2/RNv platform** | <https://taranawireless.com/>
- S4 **Ubiquiti Enterprise WiFi / Switching / UISP Fiber / LTU** | <https://ui.com/>
- S5 **TP-Link Omada Wi-Fi 6/7 and business networking** | <https://www.tp-link.com/us/business-networking/omada/>
- S6 **Alta Labs AP and switch portfolio** | <https://www.alta.inc/>
- S7 **Nokia Lightspan / Home Wi-Fi / Corteca** | <https://www.nokia.com/broadband-access/>
- S8 **Ceragon microwave / MultiHaul portfolio** | <https://www.ceragon.com/>
- S9 **Intracom Telecom WiBAS / UltraLink portfolio** | <https://www.intracom-telecom.com/>
- S10 **FreeWave rugged IIoT / ZumLink / LRS** | <https://www.freewave.com/>
- S11 **Fibrain / HALNy OLT and ONT portfolio** | <https://fibrain.com/>
- S12 **Altowav AltoPlex D621 / C410 / C420** | <https://www.altowav.com/>