# Helping Service Providers Empower Communities with the Broadband, Equity, Access & Deployment (BEAD) Program

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# About Calix

Calix is a leading global provider of platforms, cloud, and managed services that enable broadband service providers (BSPs) of all types and sizes to transform their businesses and communities. Over the last 25 years, our BSP customers have leveraged the Calix Broadband Platform to

- **Simplify** their operations, engagement, and services;

- **Innovate** for their consumer, business, and municipal subscribers; and

- **Grow** their value for members, investors, and the communities they serve.

Our portfolio of fully compliant Broadband Equity, Access, and Deployment (BEAD) solutions further ensure that BSPs can easily transform from speed into experience providers, meet evolving subscriber needs, and invest to grow their communities.

- http://www.calix.com

- Mission: Simplify, Innovate, and Grow

- Headquarters: San Jose, CA

- Founded: August 17, 1999

- Customers: 1,600+ worldwide

# Experience

For 25 years, Calix has remained committed to enabling the success of rural America. We extend that legacy by building broadband systems that meet the highest standards of quality and security for our BSP customers who benefit from U.S. government programs like BEAD.

We are proud to have a customer base of strategically aligned market disruptors and innovators:

- Market share leader: Based on data from industry research firm Dell'Oro Group, Calix has captured the #1 spot in the North American market in XGS-PON ports shipped.

- Proven platform: Over 1,000 BSPs have deployed Intelligent Access systems running under the Calix Broadband Platform, the foundation of our BEAD-compliant solutions.

- 650+ XGS-PON Customers: 663 BSPs worldwide deploy our XGS-PON broadband access solutions, and the number continues to grow.

We appreciate the opportunity to partner with your organization to provide essential broadband services to underserved communities through the BEAD program. Your team can benefit from our expertise in helping our BSP customers streamline all aspects of the funding process, so you can focus on enabling your communities' economic growth, education, health, and safety.

Over 650+ Calix Customers Deploying XGS-PON
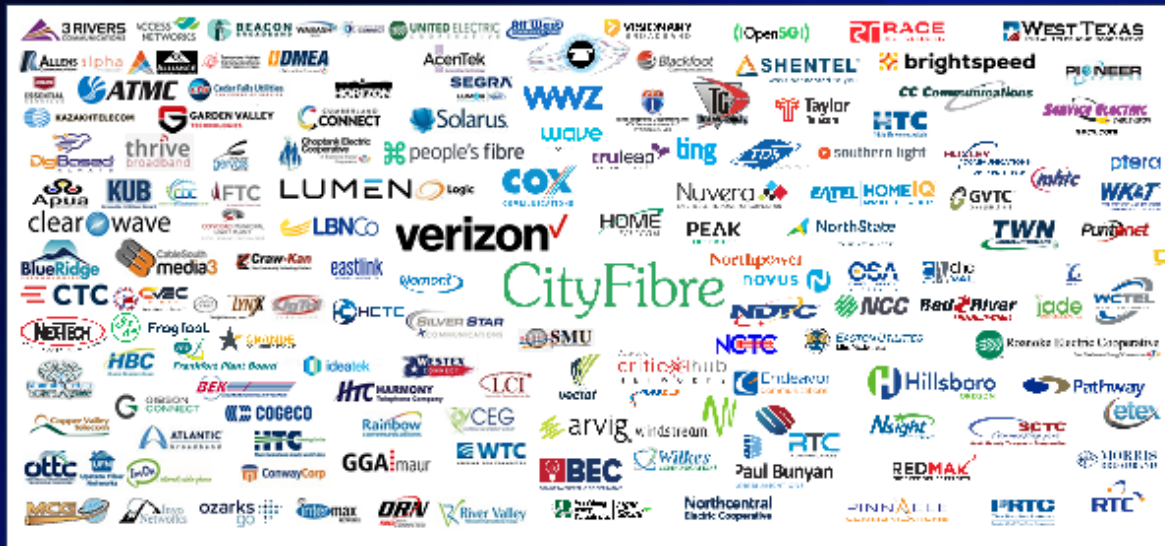
# Approach

Our transformational approach is focused on helping BSPs engage, excite, and empower your community. We want to ensure the BEAD Project's success and that you have what you need throughout the network and service lifetime, from the project beginning to design, deployment, day-to-day operations, and compliance.

What you need to succeed as an experienced provider:

- Secure the funding to transform your community
- A well planned, competitive, and complete BEAD application
- A resilient, flexible, high-performance network that is easy to deploy and simple to operate and scales cost-effectively
- A broadband platform that simplifies service delivery is easy to operate and enhances the subscriber experience.
- Determine what you need to meet your operational compliance obligations (Speed testing, reporting, etc.)
- Value-added managed services to monetize and grow your business
- Success teams to help you through every step

# BEAD Program Compliance

As BSPs face the challenge of raising enough capital to build and expand their business, Calix has a dedicated funding team to help them through this journey. Our team of funding specialists assists with the most recent information on broadband funding opportunities as they are introduced and personalized strategies to maximize their grants to support their growth.

We provide the following process guidance and supporting documents to support BEAD compliance.

## Supply Chain Readiness

Calix is committed to delivering high-quality products and services to our customers while ensuring the resilience of our supply chain.

Appendix A, BEAD Compliance and Supply Chain Readiness Letter supports your prequalification and application process. Jerry Cederlund, Calix Senior Vice President of Supply Chain Operations, describes the initiatives we have invested in to strengthen our supply chain capabilities and performance.

## BEAD Program Portfolio

Calix has identified eligible broadband network infrastructure components and systems for BEAD-funded projects to assist in designing, building, deploying, and operating networks that connect unserved and underserved communities.

Appendix B, BEAD Program Datasheet supports your funding business case, and provides details of Calix's BEAD compliant portfolio of products.
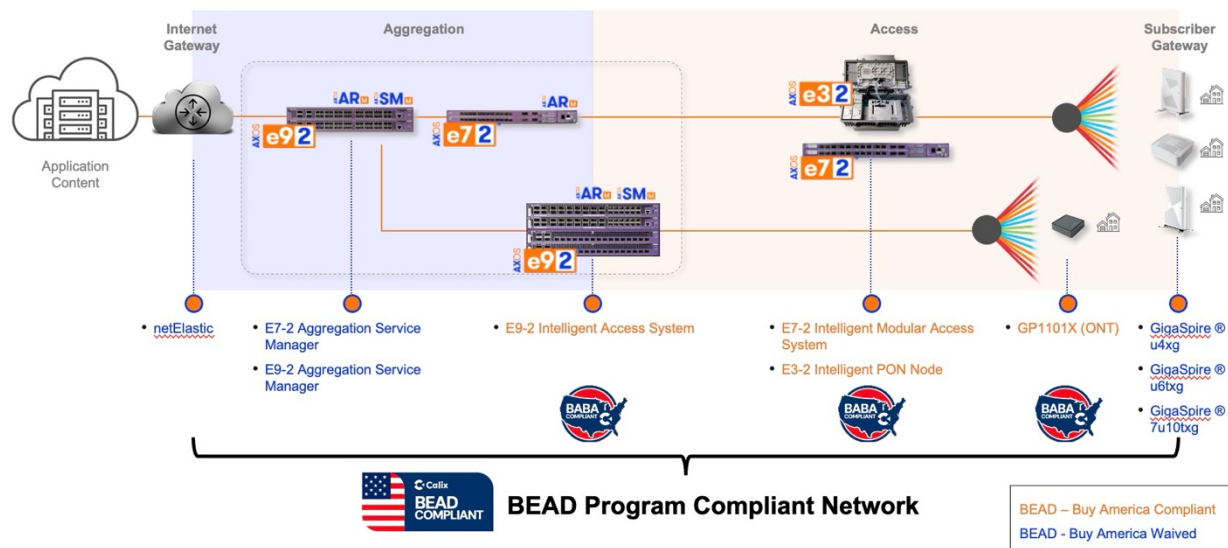
# Build America, Buy America

Today, Calix employs over 1,000 professionals in the US who design, develop, market, sell, and service its end-to-end broadband platform and managed services. Calix also has manufacturing partners with production facilities in the US. The Calix portfolio of offerings includes domestically produced products to meet the Build America, Buy America (BABA) requirements detailed in the BEAD waiver.

Calix completed the final step of its BEAD readiness by filing a [self-certification](#) of its domestically produced products with the National Telecommunications and Information Administration (NTIA). This document certified Calix's compliance with the BABA domestic production requirements for BEAD.

We will work with your organization to certify and provide necessary reports to facilitate your compliance with NTIA's reporting requirements.

# Compliance and Reporting

We will provide the following to our customers with their BEAD deliveries:

- Manufacturer's Certification Letter: This is an NTIA requirement and certifies that the domestically produced products in your order satisfy the manufacturing requirements specified in the BEAD waiver.

- A report to help you prepare your Subrecipient Tracker: the tracker is an NTIA requirement for the fully waived electronics in your order. We will provide you with a report which contains the information you need to complete this tracker.

- A list of the *de minimis* products in your order: we will provide you with a list, including cost, of the *de minimis* products in your order to facilitate your tracking of total *de minimis* spend.

# Cybersecurity

Calix is committed to delivering to the highest standards of product software quality and security. Our Information Security Management System (ISMS) uses principles from the National Institute of Standards and Technology (NIST) Cybersecurity Framework.

We will work with your organization to ensure alignment with BEAD cybersecurity requirements and recommend that you consider engaging consulting professionals to assist with planning and compliance.

# Why Calix?

## Vision and Purpose

BSPs need to be agile and innovative in a rapidly changing market to deliver differentiated services to their communities successfully. Recognizing early the critical trends that shape the BEAD program, Calix has designed our platforms around the mission to simplify, innovate, and grow so our provider customers can be a service and experience provider that build scalable, resilient, and secure networks that meet BEAD's critical testing and performance validation requirements.

## Focus and Execution

In today's capital- and resource-constrained environment, BSPs need robust solutions that maximize investments and compliance, including securing and maintaining BEAD funding. We demonstrate a track record of simplifying the application and reporting processes required by federal and state funding programs. Calix has worked with nearly 74 percent of all federally funded BSPs in the United States to help ensure compliance. Our Funding Consult Program, which incorporates over two dozen partnerships, has helped BSPs secure over $2 billion in federal funding.

## Leadership and Trusted Advisor

BSPs need the guidance of a knowledgeable advisor. For 25 years, Calix has been on this journey with customers with challenges like yours, relying on the leadership of Calix to architect successful networks and transform business models. You can be confident in Calix BEAD-compliant solutions, knowing your investment brings your subscribers and your organization the highest value.



**Why Calix?**
**What makes us different?**

1. We're a platform company, not a box provider –Offering World-class CPE and value add managed WiFi that you can quickly take to market

2. YOUR brand is placed front and centre (not Calix) and your subscriber data remains YOUR subscriber data

3. We are investing heavily in a roadmap of managed services to help YOU constantly evolve

4. It's a partnership: your success is our success – you'll have a team alongside you every step of the way.

# Appendices

A. BEAD Compliance and Supply Chain Resiliency Letter

B. BEAD Program BABA Product

**Re: Calix's Broadband Equity Access and Deployment (BEAD) Program Portfolio**

BEAD Compliant Portfolio

Calix is pleased to confirm that it has a portfolio of products which will allow its customers to complete BEAD-compliant end-to-end fiber network deployments. On August 7, 2024, Calix completed the final step in its BEAD readiness by filing a self-certification with the National Telecommunications and Information Administration (NTIA). This document certified Calix's compliance with the Build America Buy America domestic production requirements for BEAD. As a result of this certification, Calix is one of the manufacturers listed on the NTIA's BEAD website.

Supply Chain Resiliency

In addition to having a full line of BEAD compliant products, Calix understands the importance of providing peace of mind to its customers about the availability of these products when needed. To that end, Calix is committed to delivering high-quality products and services to our customers while ensuring the resilience of our supply chain. In fact, on December 4, 2024, **Calix was recognized by Resilinc as one of the Top 16 Most Resilient Suppliers in the high tech industry**. This award was based on Resilinc's independent assessment of over 140,000 companies using key metrics, including performance, network resilience, transparency, continuity of supply, and risk program maturity.

We understand the challenges and opportunities that come with operating in a dynamic and complex global environment. That is why we have invested in the initiatives detailed below to strengthen our supply chain capabilities and performance:
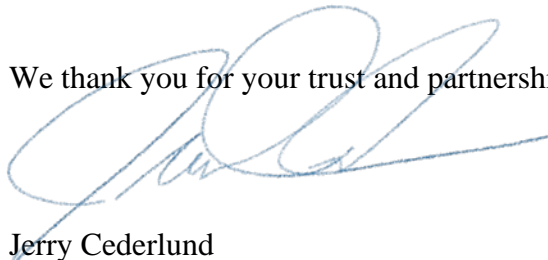
- Supply Assurance: We have increased our inventory and component buffer by investing over $100M in the past five years. We have also developed multiple sources for volatile parts and multiple ports of entry into the US to reduce the impact of supply disruptions.

- Product Platforming: We have simplified our product portfolio by managing less than 300 core part numbers, many of which are interchangeable and fungible across different products. We have also diversified our manufacturing sites to at least two countries for most key products and plan to expand to three countries by the end of 2025.

- <u>Supplier Relationships</u>: We have established long-term agreements and peer-to-peer senior relationships with our critical suppliers. We have also collaborated with them to develop business continuity plans, share innovative solutions, and monitor their financial health and cybersecurity risk.

- <u>Risk Management</u>: We have conducted comprehensive risk assessments with all our suppliers across various metrics, including geo-political, natural disaster, and ESG risk. We have also implemented proactive strategies and reactive tactics to mitigate these risks, such as scenario planning, event mitigation, and automated response systems.

- <u>Sustainability</u>: We have improved our sustainability performance and scores in multiple categories, including environment, labor and human rights, ethics, and sustainable procurement. We have established a Supplier Code of Conduct to ensure that our suppliers are compliant with our sustainability goals and industry benchmarks.

- <u>Supply Chain Resilience</u>: Calix bases its supply resilience programs on various publications by NIST as well as TIA's SCS9001. Calix is a member of the working group dedicated to developing the final version of SCS9001 and subsequently becoming certified that Calix meets the requirements.

Calix is proud to offer a comprehensive BEAD portfolio to its customers, while also ensuring its supply chain resilience. Together, these achievements will allow our customers to confidently apply for BEAD funding. In partnership, Calix and its customers are prepared to bring improved broadband service to unserved and underserved communities.

We thank you for your trust and partnership.

Jerry Cederlund

Senior Vice President

Global Customer Supply Chain

Calix, Inc.

# Appendix B: BEAD Program BABA Product List

The appendix offers an overview of the Calix BEAD Program's Build America Buy America products. For more details and order number information, please refer to the Calix BEAD Program network infrastructure data sheet at the My Calix portal.

## Unlimited Subscriber Systems BEAD Program Eligible



| GigaSpire® u4xg | GigaSpire® u6txg | GigaSpire® GS7 | GigaPoint GP1101X |
|---|---|---|---|
| Dual-Band Indoor | Dual-Band Indoor | Tri-Band Indoor | Indoor ONT |
| Wi-Fi 6 System | Wi-Fi 6 System | Wi-Fi 7 System | XGS-PON |
| XGS-PON WAN | XGS-PON WAN | XGS-PON WAN | 10GE LAN |
| 2 x GE LAN, 1 POTS | 10GE LAN, 4 x GE LAN, 2 POTS | 10GE LAN, 4 x 2.5GE LAN, 2 POTS | 1 POTS |
| Residential, Small Business | Residential, Small Business, MDUs | Residential, Small Business, MDUs | Residential Demarcation |

*BEAD Project Eligible Unlimited Subscriber ONT Systems*

## Unlimited Subscriber Solutions

| Name | Description |
|---|---|
| **GigaSpire u4xg** | GS2128XG, dual band 2x2 Wi-Fi 6, XGSPON WAN, 2 GE LAN, AM power adapter |
| **GigaSpire u6txg** | GS5229XG, dual band Wi-Fi 6, XGS WAN, 10GE + 4 GE LAN, 2 POTS, AM power adapter |
| **GigaSpire 7** | Tri Gateway, GS5239XG,Triband 2x2+4x4+4x4 Wi-Fi 7 RG/Mesh, XGS WAN, 10GE and 4 2.5GE LAN, 2 POTS, USB, AM PA |
| **GigaPoint GP1101X** | 1 10GE 1 POTS, - AM Power Adapter - BEAD |

## Access Systems BEAD Program Eligible



**e92**

**Intelligent Edge System**

- Data Center / Headend
- Controlled Environment
- Stackable / Easily Expandable
- Front-to-back airflow

**e72**

**Intelligent Modular System**

- Central Office / Remote Cabinet
- Temperature Hardened
- Designed for Small Spaces – 1RU
- Side to Side Airflow

**e32**

**Intelligent PON Node**

- Remote Node / Strand / Pole
- Outdoor Installation
- Pole, Wire, CoolPed
- No Fans Required

*BEAD Project Eligible Intelligent Access Systems*

## Intelligent Access AXOS Solutions

| Name | Description |
|---|---|
| **Network Innovation OS - AXOS Licenses** | |
| **AXOS** | AXOS Software Defined Access Operating System - Term License |
| **AXOS** | AXOS Software Defined Access Operating System -  Perpetual License |
| **E3-2 Intelligent PON Node** | |
| **E3-2 8-port** | E3-2 8-Port PON (XGS-GPON, GPON, MPM) – BEAD |
| **E3-2 4-port** | E3-2 4-Port PON (XGS-GPON, GPON, MPM) – BEAD |
| **E3-2 8-port / 100GE WAN** | E3-2 8-Port PON (XGS-GPON, GPON, MPM) with 2x100GE WAN – BEAD |
| **E3-2 Pole Mount Kit** | E3-2 Pole/Wall Mount Kit |

| Name | Description |
|---|---|
| **E7-2 Intelligent Modular System** | |
| **E7-2 System Shelf** | E7-2 Shelf, 1RU, 2 Slots, with 1 Blank Card – BEAD |
| **E7-2 XG1601** | E7-2 XG1601 XGS-PON (2xQSFPP-DD, 2 xSFP+, 8x XGS-DD/MPM OIM) - BEAD |
| **E7-2 XG801** | E7-2 XG801 XGS-PON (2xQSFP-DD, 4xSFP+, 8xXGS-PON/GPON OIM) - BEAD |
| **ASM1001** | ASM1001 100GE-2 (2xQSFP, 12xSFP+) |

## Service Aggregation BEAD Program Eligible



*BEAD Project Eligible Intelligent Access Aggregation Service Manager (ASM) System*

| Name | Description |
|------|-------------|
| **E9-2 Intelligent Edge System** | |
| **E9-2 System Shelf** | E9-2 SHELF, 2RU, 2 SLOTS, INCLUDES 19" HORIZONTAL MOUNT BRACKETS – BEAD |
| **XG3201** | E9-2 XG3201 line card (32 ports XGS-PON) - BEAD |
| **CLX3001** | E9-2 CLX3001 Aggregation and Common Control Card (4xCDFP, 2xQSFP28, 8xSFP+, 2xSFP) |
| **ASM3001** | E9-2 ASM3001 Aggregation Services Manager (4xQSFP-DD, 32xSFP+) |
| **ASM5001** | E9-2 ASM5001 Aggregation Services Manager (22x100G,12xSFP28) |

## Optic Pluggable BEAD Program Eligible

| Order Code | Description |
|---|---|
| **XGS-PON Optic Pluggable (Subscriber Facing)** | |
| **XGS-PON SFP-DD, 40km** | XGS-PON SFP-DD, Dual Channel 10G/10G, Class N2, 1577/1270nm, 40km, LC, I-Temp, OLT - BEAD |
| **XGS-PON SFP+, 40km** | XGS-PON SFP+, 10G/10G, Class N2, 1577/1270nm, Single Fiber Transceiver, 40km, I-Temp, OLT, E-Series – BEAD |
| **XGS-PON SFP+, 20km** | XGS-PON SFP+, 10G/10G, Class N1, 1577/1270nm, Single Fiber Transceiver, 20km, I-Temp, OLT, E-Series -BEAD |
| **XGS-PON SFP+, 60km** | XGS-PON SFP+, 10G/10G, Class E1, 1577/1270nm, Single Fiber Transceiver, 60km, I-Temp, OLT, E-Series -BEAD |
| **XGS-PON SFP-DD, 20 km** | XGS-PON SFP-DD, Dual Channel 10G/10G, Class N1, 1577/1270nm, 20km, LC, I-Temp, OLT -BEAD |
| **Optical Transceiver Module (Network Facing)** | |
| **QSFP28 100GE, 10km** | QSFP28 100GE Single Mode Optical Transceiver 10km, 1310nm, Dual LC, I-Temp |
| **QSFP28 100GE, 25km-40km** | QSFP28 100GE Single Mode Optical Transceiver 25km-40km, 1310nm, Dual LC, I-Temp |
| **QSFP28 100GE, 80km** | QSFP28 100GE Single Mode Optical Transceiver 80km, 1310nm, Dual LC, I-Temp |
| **QSFP28 100GE, 10km** | QSFP28 100GE Single Mode Optical Transceiver 10km, 1310nm, Dual LC, C-Temp |
| **QSFP28 100GE, 25km-40km** | QSFP28 100GE Single Mode Optical Transceiver 25km-40km, 1310nm, Dual LC, C-Temp |
| **10GE SFP+, 10km** | 10GE SFP+, Single Mode dual fiber transceiver, 10Km, 1310nm, LC, I-temp |
| **10GE SFP+, 40km** | 10GE SFP+, Single Mode dual fiber transceiver, 40Km, 1550nm, LC, I-temp |
| **10GE SFP+, 80km** | 10GE SFP+, Single Mode dual fiber transceiver, 80Km, 1550nm, LC, I-Temp |

**Notes:**

- Calix believes the information in this document to be accurate as of the publication date and is not responsible for any error. Product Specifications are subject to change without notice.
- The above product listing is not an exhaustive list for BEAD waived and US Department of Commerce 'de minimis' items. Please contact your Calix representative for guidance on additional accessories not identified in the list above.