

Fiber Deployments By Independent Telcos

The number of independent telcos deploying fiber continues to rise rapidly, as a result of both stimulus funding and privately funded builds.

By Masha Zager ■ *Broadband Properties*

ABOUT THE LIST

Since 2005, Broadband Properties has maintained a list of independent telephone companies that are deploying fiber to the premises. We publish the list several times each year. We also maintain the list online at www.bbpmag.com/search.php to enable you to search, sort and download all this information. The online list includes other types of deployers in addition to independent telcos.

Although we gather information from as many sources as we can, we know the list is not complete. To add to the list, fill in missing information or correct any errors, please contact masha@broadbandproperties.com.

The Broadband Properties list of independent telcos deploying fiber has now grown to 475 – about 10 times the size of the first list we compiled in 2005. Companies have announced so many new fiber projects that we’ve had trouble keeping up with them; there are probably another 50 or more that we haven’t accounted for. That means about half the independent telcos in the United States now have at least some experience deploying fiber to the premises.

One source of this growth is broadband stimulus funding from the Rural Utilities Service, which has awarded the bulk of its last-mile funds to FTTH projects. (See this issue’s Fiber Deployment Roundup for details.) However, many of the RUS awards – especially the largest ones – were to companies that have deployed fiber for years, such as Rural Telephone in Kansas and Xfone in Texas.

A more significant reason the list is growing is that FTTH has become the default choice for telcos when they have to build new plant. Few telcos have undertaken the replacement of their entire

Fiber to the home has become the default choice for independent telephone companies when they have to build new plant. A few have decided to replace all their legacy copper plant with fiber.

infrastructure with fiber – though certainly, some are doing so. But when they wire new subdivisions, replace deteriorated copper plant or overbuild into territories served by other providers, telcos now tend to choose fiber to the home. “I never want to dig up this town again,” one general manager told us, explaining that the fiber he was putting in the ground was likely to outlast his career.

Telcos are choosing fiber because of

- continuing technological development that has reduced the cost of deploying fiber and made it comparable to, or less expensive than, the cost of deploying new copper plant

- a longstanding commitment to local economic development
- a desire to provide advanced services to residential customers.

Many, if not most, of the telcos on the list are in the midst of long-term fiber upgrades. After starting with trial deployments, they commit to building out fiber wherever it makes economic sense, including in CLEC territories close to their established service areas.

Telcos that were early adopters of FTTH have also continued to upgrade their fiber electronics. Though our list still shows a number of BPON deployments, we suspect that many of them have

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INDEPENDENT TELCOS

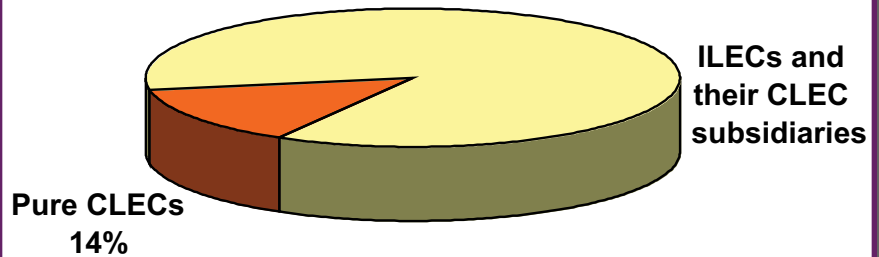
in fact upgraded by now. By deploying newer technologies, they demonstrate that they have achieved their original goals of “future proofing” their networks: They can use the same fiber to offer more advanced services.

WHY BUILD FIBER?

Independents told us they decided to build fiber networks in situations such as these:

- Their old copper plant was failing and they didn't want to replace it with more copper that would soon be obsolete.
- In new housing developments, they found that FTTH was comparable to copper in terms of capital cost but would be less costly to maintain and have a longer useful life.
- They wanted to offer video and other advanced services and decided that DSL had too many limitations. Many rural telcos already owned cable TV plant (they are exempt from cable-telephone cross-ownership restrictions) and wanted to upgrade their video services without pouring money into obsolete cable networks.
- Their service areas were losing jobs and population, and they believed fiber would attract more economic opportunity.
- Their service areas were growing rapidly, and new residents moving in from metropolitan areas considered fiber an amenity.

FTTH Network Builders by Type



Independents usually build in their area of incumbency, but often expand into neighboring towns as CLECs. Pure CLECs may have no geographical bases.

- They saw opportunities to compete in underserved areas outside their traditional service areas where residents were unhappy with the available choices for video or Internet service.

Because independent telcos rarely compete, they tend to regard one another as colleagues. They share experiences and pool information. As information spreads, one success gives rise to another. Over the last several years, with fiber deployment costs falling and the cost of copper rising, more and more independents have been encouraged to try deploying fiber to the home.

WHAT THE NUMBERS SHOW

1. The great majority of independent telcos building fiber networks are incumbent providers or subsidiaries of incumbents.

Five of six companies on our list are ILECs (incumbent carriers dating back before 1996) that are either replacing old copper plant with fiber, building fiber to new developments in their service areas, or overbuilding towns near their service areas where they have name recognition – or some combination of the three. In most states they must form CLEC subsidiaries to move outside their traditional service areas, but we still list them as ILECs even if their fiber-to-the-home networks are only in their CLEC areas.

The remaining companies are pure CLECs (competitive carriers) with no traditional geographic bases. These companies seek out promising territories to overbuild with fiber. A few of them build hybrid fiber-coax

WHAT IS AN INDEPENDENT TELCO?

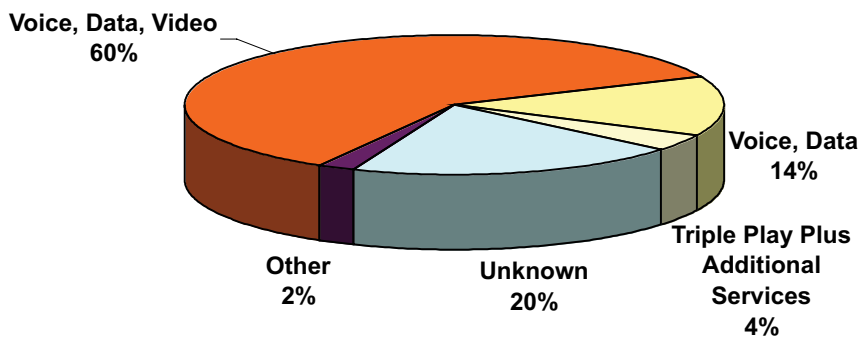
The companies that appear on this list are licensed providers of wireline voice services other than Verizon, AT&T and Qwest. They are regulated in the United States as ILECs (incumbent providers) or CLECs (competitive providers) or both. The majority are rural providers, many of them cooperatives or small family-owned businesses, set up 50 or more years ago to offer telephone service in regions not covered by the Bell system. A smaller number came into existence after the Telecommunications Act of 1996, some specifically to build fiber-to-the-home networks in new housing developments, others to serve businesses or to offer telecommunications alternatives in underserved areas.

With each passing year, the telco category becomes more difficult to define. Many companies other than traditional telcos deliver reliable, interconnected voice service, using either wireless or wireline networks. Excluding these companies is somewhat arbitrary, especially because many telephone companies have moved beyond traditional switched telephony to offer wireless service and wireline VoIP. Some nontraditional telephony providers are functionally no different from CLECs. However, telcos still exist as a historical and legal category, and our definition is consistent with industry usage.

To the extent possible, we have excluded from the list telcos whose only involvement with FTTH is to deliver services over fiber access networks that they do not own and were not involved in building – for example, networks owned by municipalities or housing developers.

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Services Planned or Delivered



Video is usually necessary to recoup the cost of an FTTH network, especially in residential areas. The triple play continues to be the standard offering.

networks in some areas and FTTH networks in others.

The proportion of ILECs to CLECs has remained surprisingly constant over the five years we have tracked telco fiber builds, even as the number of companies on the list increased tenfold.

Most of the pure CLECs originally collaborated with housing developers to build networks in greenfield developments and master-planned communities, but given the shortage of new housing in the last few years, some have turned to overbuilding. A few, such as ComSpan USA and Hiawatha Broadband, adopted an overbuilding model from the start. Others focus on serving small and mid-sized businesses.

Though the typical independent telco serves a few thousand customers in one or two rural counties, the companies on this list range from corporate giants such as CenturyLink, which serves 7.5 million customers in 33 states, to tiny cooperatives such as Allband Communications, with fewer than 200 customers in a remote corner of Michigan. Likewise, their fiber deployments range from about 150,000 homes passed by SureWest to pilot projects with fewer than a hundred homes passed.

- Most providers plan to deliver the triple play of voice, data and video services.

Delivering advanced video services is usually a motivating factor for a fiber buildout. Many independent

telcos also manage cable TV networks alongside their telephone networks. Deploying fiber to the home allows them to merge the two, reducing network management costs while adding high-definition TV, DVR, video on demand and a wider selection of channels.

Beyond the triple play, the most common additional service is security monitoring. Some telcos also offer gaming, caller ID on TV and PC (convergent applications) or business applications.

Recent announcements of FTTH deployments often mention the desire to move to all-IP networks. VoIP is now often used in place of traditional switched telephony, just as IPTV is displacing RF video.

- Companies are choosing more advanced FTTP technology options.

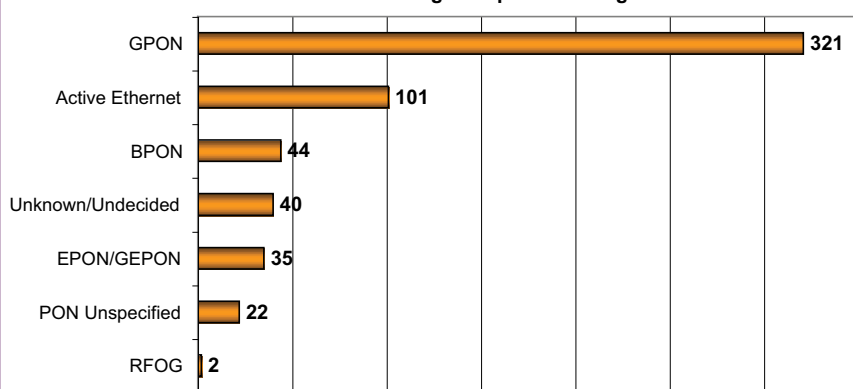
Our first published list included mainly BPON systems, with a few EPON and one active Ethernet system. Today, although passive optical networking remains most popular, more than 100 independent telcos use active (point-to-point) Ethernet for one or more projects. Although some telcos have made a company-wide commitment to active Ethernet, many use it for niche applications, such as serving large businesses.

Gigabit passive networks, both GPON and GEAPON, have become standard. GPON is the PON of choice for this group – five of six companies with passive optical networks have adopted GPON. (The actual proportion is probably even higher – chances are that we haven't heard about all the migrations from BPON to GPON.) The migration to GPON was speeded by the availability of Calix's auto-sensing optical network terminal, which allows telcos to upgrade central-office equipment without having to replace the customer-premises equipment.

The number of telcos with multiple types of technologies, though still small, continues to grow. Our list shows that about 20 percent now use multiple technologies. Although many companies prefer to stay with the technology they have already

Technology Used

Note: Some telcos using multiple technologies.



Passive optical networks are far more common than active networks, but active networks continue to gain in popularity. Gigabit PON has largely replaced older, slower standards.

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used successfully, others find that their needs change over time, that newer technologies allow them to upgrade their services or that their requirements vary from one part of their service area to another.

Technical factors also encourage the use of multiple access technologies. Recently released access platforms are designed to accommodate different technologies from the same chassis.

4. Many vendors are competing successfully in the independent telco market.

Independent telcos differ substantially from the Regional Bell Operating Companies (RBOCs) in their dealings with vendors. RBOCs typically deal with large, global equipment vendors that design and manufacture equipment to their specifications. The resulting equipment is not always well suited to smaller, more rural markets.

Using multiple technologies has become easier because access platforms are now designed to support both active and passive networks.

The three electronics vendors from which Verizon has purchased most of its FTTH equipment – Alcatel-Lucent, Motorola and Tellabs – do not dominate the Tier 2-Tier 3 telco market, even though all three have had significant customer wins (notably Cincinnati Bell and Optimum Lightpath, which serve metropolitan areas).

The great majority of the companies on the independent telco list purchase their FTTH electronics, and often their fiber management equipment, from vendors that specialize in serving Tier 2 and Tier 3 telcos. These vendors are less likely to design equipment for particular customers; rather, they supply equipment for a variety of

use cases and help customers configure it to meet specific needs.

When independent telcos first began deploying fiber in 2001, nearly all of them used FTTH electronics from Optical Solutions Inc. (OSI). Calix acquired OSI in 2005 and has continued to maintain OSI's lead in this market. About three-fifths of the telcos on our list use have purchased equipment from Calix or the former OSI – a proportion that has remained relatively stable over the last few years.

However, as the independent telco market grew, as equipment became more standardized and as competing vendors merged with one another, additional strong competitors have

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emerged in this market, especially Occam Networks and Enablence. We show each of these two companies supplying FTTH electronics to about 10 percent of the independent telcos on our list; however, there is reason to believe the number of customers may be substantially higher. (Much of the relevant information is nonpublic.)

At least 10 percent of the companies on the list use FTTH equipment from multiple electronics vendors – and again, the actual number

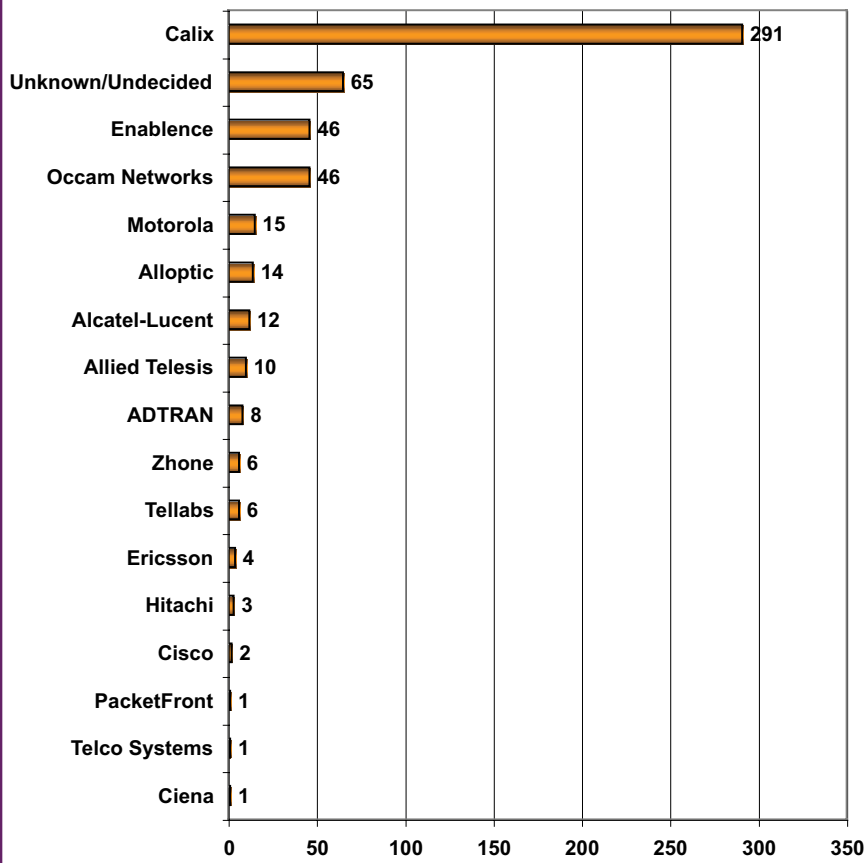
is probably much higher. Although press coverage (for example, about the broadband stimulus program) tends to refer to rural telcos almost as captive customers of their equipment vendors, this is far from being true. As the market has become more competitive – and, presumably, as more telcos have developed in-house expertise – an increasing number of telcos have been willing to mix FTTH equipment from different vendors. **BBP**

TELCOS BUILDING FTTP NETWORKS, BY STATE

BBP's count of independent telco FTTP networks by state still shows Iowa in the lead – not surprising, as Iowa has close to 250 rural telcos, far more than any other state. But Minnesota and Texas are close behind, and we've documented current or pending builds by independent telcos in 47 states, the District of Columbia and Puerto Rico. Only Massachusetts, Delaware and Rhode Island are missing from the list – and they are at the epicenter of Verizon's FiOS build.

STATE	NO.	STATE	NO.
IA.....	44	FL.....	9
MN.....	34	VA.....	9
TX.....	29	UT.....	9
KS.....	25	WA.....	9
WI.....	22	PA.....	8
NY.....	20	KY.....	8
GA.....	19	MS.....	8
OH.....	17	AR.....	7
OR.....	16	TN.....	7
ND.....	15	LA.....	5
NE.....	15	NM.....	5
SC.....	14	WV.....	4
NC.....	13	WY.....	4
MT.....	13	NV.....	4
IN.....	13	AK.....	3
ID.....	13	ME.....	3
MI.....	12	VT.....	3
CA.....	12	NH.....	3
AZ.....	12	HI.....	2
MO.....	12	MD.....	2
SD.....	11	DC.....	1
AL.....	10	PR.....	1
IL.....	10	NJ.....	1
OK.....	10	CT.....	1
CO.....	10		

FTTH Network Builders by Vendor



Calix remains the leading electronics vendor in this market, though several other vendors have substantial numbers of customers.

The following table shows independent telcos that have constructed FTTH networks or are actively planning them. A few companies identified as CLECs are non-telco amenity providers in some of the states where they operate. Many of the companies identified as ILECs are installing FTTH through their CLEC subsidiaries. We've made every effort to update the names of vendors and deployers to reflect mergers and rebrandings. If your company is missing, or if the information is incomplete, send corrections to masha@broadbandproperties.com. We update this list daily on www.broadbandproperties.com/search.php

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Provider	States	Vendor – FTTH Electronics	Start Date	Greenfield/ Replace/ Overbuild	Technology	Services	USDA Rural Dev Loan	Prov. Type
3 Rivers Communications	MT	Calix, Enablence, Occam Networks	2006	R	PON, Active Ethernet	Triple Play		ILEC
702 Communications	ND MN			O	Active Ethernet	Business services, Voice, Data		CLEC
Adak Telephone	AK	Calix	2006	R	GPON	Triple Play		ILEC
Adams Telephone Cooperative	IL	Calix	2006	R	GPON	Triple Play		ILEC
Albany Mutual Telephone Association	MN	Enablence	2006	R	Active Ethernet	Triple Play		ILEC
Alenco Communications (Pathway Com-Tel)	TX	Calix	2002	O, G	PON	Triple Play		ILEC
All West Communications	UT	Calix	2004	O	GPON	Triple Play		ILEC
Allband Communications Cooperative	MI	Calix	2005	G	GPON	Triple Play, Security	✓	ILEC
Allendale Communications	MI	Enablence	2005	G	Active Ethernet	Triple Play		ILEC
Alliance Communications	SD	Calix	2006	R	GPON	Voice, Data		ILEC
Allo Communications	NE	Calix	2005	O	Active Ethernet, GPON	Voice, Data, Business services	✓	CLEC
Alma Communications	MO	Enablence, Calix	2006	R	GPON	Triple Play		ILEC
Alpine Communications	IA	Occam Networks	2007	R	Active Ethernet	Voice, Data		ILEC
Amherst Telephone Company	WI		2009	R	Active Ethernet	Triple Play		ILEC
Arcadia Telephone Cooperative	IA	Calix	2010		GPON			ILEC
Armstrong Telephone	PA				GPON, Active Ethernet	Voice, Data		ILEC
Arvig Communications (East Otter Tail)	MN	Calix	1995	R, G	GPON	Triple Play		ILEC
Astound Broadband	CA	CTDI (Alloptic)	2004	R	EPON	Voice, Data		CLEC
ATC Communications	ID	Calix	2008		GPON	Triple Play		ILEC
ATMC	NC	Motorola	2005	G	BPON, GPON	Triple Play		ILEC
Aztech Cable	AZ	Calix		O	GPON	Triple Play		CLEC
Baldwin Telecom	WI	Calix	2002	G	GPON	Triple Play	✓	ILEC
Ballard Telephone	KY	Occam Networks	2008	R	GPON	Triple Play		ILEC
Baraga Telephone	MI	Calix			GPON	Triple Play		ILEC
Barry County Telephone	MI	Calix			GPON			ILEC
Bascom Mutual Telephone Company	OH	Calix	2003	O	BPON	Triple Play		ILEC
Bay Springs Telephone Company	MS			R		Voice, Data	✓	ILEC
BEK Communications	ND	Calix	2004	R	GPON	Voice, Data	✓	ILEC
Ben Lomand Telephone Co-op	TN	Occam Networks	2006	R	Active Ethernet	Triple Play		ILEC
Benkelman Telephone Company (Wauneta Telephone, BW Telcom)	NE	Calix	2009		GPON			ILEC
Benton Cooperative Telephone Company (Milaca Local Link)	MN	Calix, CTDI (Alloptic)	2005	G	GPON, GEAPON	Triple Play		ILEC
Benton Ridge Telephone Company	OH		2010	R	Active Ethernet	Triple Play	✓	ILEC
BEVCOMM (Eckles Telephone Company)	MN		2007	G	Active Ethernet	Triple Play		ILEC
Big Bend Telephone	TX	Calix, Enablence	2005	R	GPON, Active Ethernet	Triple Play		ILEC
Blair Telephone (HunTel)	NE	Calix			GPON			ILEC
Bloomer Telephone	WI	Calix	2007	R	GPON	Triple Play	✓	ILEC
Blossom Telephone Company	TX		2010	R			✓	ILEC
Blue Valley Tele-Communications	KS	Tellabs	2006	R	GPON	Triple Play		ILEC

INDEPENDENT TELCOS

Provider	States	Vendor – FTTH Electronics	Date	Greenfield/Overbuild/Replace	Technology	Services	USDA Rural Dev Loan	Prov. Type
Border to Border Communications	TX	Calix, CTDI (Alloptic)	2004	R	BPON, GPON	Triple Play	✓	ILEC
Brantley Telephone	GA	Calix	2007	R	GPON	Triple Play		ILEC
Brazoria Telephone Company	TX	Alcatel-Lucent	2008	G	GPON	Triple Play		ILEC
Bretton Woods Telephone Company	NH		2009	R		Data		ILEC
BroadStar	NC		2005	G		Triple Play, Security		CLEC
Bruce Telephone Company	MS		2009	R			✓	ILEC
BTC (Western Iowa Networks)	IA		2008	O		Triple Play	✓	ILEC
BTC Broadband (Bixby Telephone Company)	OK	Calix	2005	G, R	GPON	Triple Play		ILEC
Buckeye Telesystem	OH	Calix	2006	O	GPON	Voice, Data		CLEC
Buckland Telephone Company	OH	Calix	2005	R	GPON	Triple Play		ILEC
Buggs Island Telephone Cooperative	VA	Calix	2009		GPON			ILEC
Bulloch Telephone Cooperative	GA	Motorola	2005	R	PON	Triple Play		ILEC
Butler-Bremer Communications	IA		2008	R	Active Ethernet	Triple Play		ILEC
C-M-L Telephone Cooperative Association	IA			R		Triple Play	✓	ILEC
Cal-Ore Communications	OR	Calix	2005	G	GPON	Triple Play		ILEC
Calaveras Telephone	CA	Calix	2006	G	GPON	Triple Play	✓	ILEC
Cambridge Telephone	ID	Calix	2005	R	GPON	Triple Play		ILEC
Cambridge Telephone Company	NE		2009	R		Triple Play	✓	ILEC
Cameron Communications (LBH LLC)	LA	Calix	2004	R, O	GPON	Triple Play	✓	ILEC
Canby Telcom	OR	Calix	2006	G, R	GPON	Triple Play		ILEC
Cap Rock Telephone Cooperative	TX	Calix	2005	G	GPON	Triple Play		ILEC
Cascade Telephone	IA	Calix			GPON			ILEC
Centennial de Puerto Rico	PR	Occam Networks	2007	R	Active Ethernet	Voice, Data		CLEC
Central Scott Telephone	IA		2007		GPON, Active Ethernet			ILEC
Central Texas Technologies	TX	CTDI (Alloptic)	2002	G	EPON	Triple Play		CLEC
CenturyLink	AL CO MI MO WI MANY	Calix		G	GPON	Triple Play		ILEC
Champaign Telephone (CT Communications)	OH	Calix, Allied Telesis		R	GPON, Active Ethernet	Triple Play		ILEC
Chariton Valley Telecom Corporation	MO	Enablence	2003	R, O	PON	Triple Play		ILEC
Chazy Westport Communications (Westelcom)	NY	Occam Networks	2009	R, O	Active Ethernet	Triple Play		ILEC
Chesnee Telephone	SC	Calix		G	GPON	Triple Play		ILEC
Cheyenne River Sioux Tribe Telephone	SD	Calix			GPON			ILEC
Chickamauga Telephone	GA	Calix	2008		GPON			ILEC
ChoiceTEL Communications	WI		2008	O		Triple Play		CLEC
Christensen Communications	MN	Calix	2008	R	BPON, GPON	Triple Play		ILEC
Cimarron Telephone	OK	Calix	2008		GPON			ILEC
Cincinnati Bell	OH KY	Alcatel-Lucent, Motorola			GPON	Triple Play		ILEC
Cinergy MetroNet	IN	Alcatel-Lucent	2005	O	BPON	Triple Play	✓	CLEC
Citizens Mutual	IA	Calix	2006	R	GPON	Triple Play		ILEC

INDEPENDENT TELCOS

Provider	States	Vendor – FTTH Electronics	Date	Greenfield/Overbuild/Replace	Technology	Services	USDA Rural Dev Loan	Prov. Type
Citizens Telephone Company	GA	CTDI (Alloptic), Cisco	2008	R	GEPON, GPON	Triple Play		ILEC
Citizens Telephone Company of Kecksburg	PA	Calix	2005	R	PON	Triple Play		ILEC
Citizens Telephone Coop	WI	Calix			GPON			ILEC
Citizens Telephone Cooperative	VA	Calix	2004	R	GPON	Triple Play		ILEC
Clarence Telephone	IA	Calix			BPON, GPON			ILEC
Clarks Telecommunications (Northeast Nebraska Telephone Company)	NE	Occam Networks	2009	R	Active Ethernet	Triple Play		ILEC
Clear Creek Telephone & TeleVision	OR	Calix	2009		GPON	Triple Play		ILEC
Clear Lake Telephone	IA	Calix	2008	R	GPON	Triple Play		ILEC
Clearwave Communications	IL	Calix			GPON			CLEC
Cochrane Cooperative Telephone Company	WI	Calix	2010	R	GPON	Triple Play		ILEC
Colo Telephone Company	IA	Calix	2005	R	GPON	Triple Play	✓	ILEC
Columbus Telephone Company	KS	Enablence	2004	R	EPON	Triple Play		ILEC
Communications 1 Network	IA	Calix	2008		GPON			ILEC
Comporium Communications (Lancaster Telephone)	SC	Enablence	2004	G	EPON, GPON	Triple Play, Converged svcs		ILEC
ComSouth Telecommunications	GA	Calix, Motorola	2005	R, G	PON	Triple Play		ILEC
ComSpan USA	OR	Hitachi	2005	O	GPON	Triple Play		CLEC
Connections Etc. (Sherburne County Rural Telephone Co./Iowa Telecom)	MN	Calix	2008		GPON			ILEC
Consolidated Communications Inc.	IL TX	Zhone Technologies	2007		GPON	Triple Play		ILEC
Consolidated Telcom	ND	Calix	2006	R	GPON	Triple Play		ILEC
Consolidated Telecommunications Company	MN	Calix	2005	O	GPON	Triple Play	✓	ILEC
Conxxus (Illicom Telecommunications)	IL	Enablence	2001	O	EPON	Triple Play		CLEC
Cooperative Telephone Exchange	IA	Occam Networks	2006	R	Active Ethernet	Triple Play	✓	ILEC
Corn Belt Telephone	IA		2008	R		Triple Play		ILEC
CP-Tel	LA	Calix	2004	G	BPON	Triple Play		ILEC
Craigville Telephone Company	IN	Calix	2006	O	GPON	Triple Play		ILEC
Craw-Kan Telephone Cooperative	KS							ILEC
Cross Communications	OK	Calix			GPON	Triple Play		ILEC
CSS Communications	WA	CTDI (Alloptic)	2003	R	EPON	Triple Play		CLEC
CT Communications	NC	Enablence	2005	G	EPON	Voice, Data		ILEC
CTS Telecom (Climax Telephone Company)	MI				Active Ethernet	Data		ILEC
Cunningham Telephone and Cable	KS		2009	R		Voice, Data	✓	ILEC
Custer Telephone Cooperative	ID	Calix	2006	R	GPON	Triple Play	✓	ILEC
D&E Communications	PA	Calix	2008		GPON			ILEC
D&P Communications	MI	Motorola	2008		GPON	Triple Play		ILEC
Dakota Central Telecom	ND	Calix	2002	R, O	GPON	Triple Play	✓	ILEC
Darien Telephone	GA	Calix			GPON			ILEC
Daystarr Communications	MI	Calix	2008	O	GPON			CLEC
Delhi Communications	NY	Enablence	2009	R	Active Ethernet	Triple Play		ILEC
DFT Communications	NY	Calix			GPON			ILEC

INDEPENDENT TELCOS

Provider	States	Vendor – FTTH Electronics	Date	Greenfield/Overbuild/Replace	Technology	Services	USDA Rural Dev Loan	Prov. Type
Dickey Rural Networks	ND	Calix	2004	R	GPON	Triple Play		ILEC
Diller Telephone Company	NE	ADTRAN	20209	R	GPON	Voice, Data		ILEC
Direct Communications	OR WA ID UT	Calix		G	BPON, GPON	Voice, Data		ILEC
Dobson Telephone	OK	Calix			GPON			ILEC
DTC Communications (DeKalb Telephone Cooperative)	TN		2008		Active Ethernet	Data		ILEC
Dumont Telephone Company	IA	Hitachi	2006	R	GPON	Triple Play		ILEC
EasyTel Communications	OK	Calix	2005	O	PON	Triple Play		CLEC
EATEL	LA	Alcatel-Lucent, Calix	2004	R, G	BPON, GPON	Triple Play, Video, Converged svcs		ILEC
Elkhart Telephone (Epic Touch)	KS	Enablence, Calix	2005	R	EPON, GPON	Triple Play		ILEC
Emily Cooperative Telephone Company	MN		2007			Triple Play		ILEC
En-Touch Systems	TX	Enablence	2006	G	EPON	Triple Play, Security, Home automation		CLEC
Endeavor Communications	IN	Calix	2006	R	GPON	Triple Play		ILEC
Enhanced Telecommunications Corporation	IN	Calix	2004	R	GPON	Triple Play		ILEC
ENMR-Plateau Telecommunications	NM	Calix, Occam Networks	2003	R	GPON	Voice, Data		ILEC
Etex Telephone Cooperative	TX	Calix, Enablence	2002	O	Active Ethernet, GPON	Triple Play		ILEC
Evertex (FiberComm)	IA				GPON, Active Ethernet	Voice, Data		ILEC
F&B Communications	IA	Calix		O	BPON, GPON	Triple Play	✓	ILEC
FairPoint Communications	WA, Many	Occam Networks, Calix		G	GPON			ILEC
Falcon Broadband	CO	Hitachi	2005	G, O	GPON	Triple Play		CLEC
Farber Telephone Company	MO		2008	R		Voice, Data	✓	ILEC
Farmers and Merchants Mutual Telephone Company	IA	Calix	2007		BPON, GPON	Triple Play		ILEC
Farmers Mutual	ID	Calix		R	BPON, GPON	Triple Play		ILEC
Farmers Mutual	MN	Calix		R	GPON	Triple Play		ILEC
Farmers Telecommunications Cooperative	AL	Occam Networks	2007	R, G	Active Ethernet	Voice, Data		ILEC
Farmers Telephone Cooperative	SC	Occam Networks	2006	G, R	Active Ethernet, GPON	Triple Play		ILEC
FEC Communications (Connexions Telecom)	TX	Calix	2006	G	PON	Triple Play		CLEC
Federated Telephone	MN	Calix	1996	O, R	GPON	Triple Play		ILEC
Fenton Cooperative Telephone Company	IA	Calix	2009		GPON	Voice, Data		ILEC
FiberNet	WV OH	Calix	2007	O	BPON, GPON	Voice, Data, Videoconferencing		CLEC
Fibertech Networks	NY	Calix, Ericsson	2006		BPON, GPON	Data, Business services		CLEC
Fidelity Telephone	MO	Calix			BPON, Active Ethernet			ILEC
Filer Mutual	ID	Calix			GPON			ILEC

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Provider	States	Vendor – FTTH Electronics	Date	Greenfield/Overbuild/Replace	Technology	Services	USDA Rural Dev Loan	Prov. Type
Foothills Rural Telephone Coop	KY	Alcatel-Lucent	2004	R, G	BPON, Active Ethernet	Triple Play	✓	ILEC
Fort Jennings Telephone Company	OH	Calix	2004	O, R	GPON	Triple Play		ILEC
Fort Mojave Telecommunications	AZ	Calix	2008	R, G	GPON	Voice, Data	✓	ILEC
Frontier Communications	Many	Calix		G	BPON, GPON	Voice, Data		ILEC
FTTH Communications	MN	Calix	2002	G	GPON	Triple Play		CLEC
Ganado Telephone	TX	Occam Networks	2008	R	Active Ethernet	Voice, Data		ILEC
Garden Valley Telephone	MN	Calix	2005		BPON, GPON	Triple Play		ILEC
Gardonville Cooperative Telephone Association	MN		2006	R				ILEC
General Communications	AK	Calix		R	GPON	Voice, Data		CLEC
Gervais Telephone	OR	Calix	2001	O, R	GPON	Triple Play	✓	ILEC
Gila River Telecommunications	AZ	Calix			BPON, GPON			ILEC
Glenwood Telephone	NE	Calix	2007	R	BPON, GPON	Triple Play		ILEC
Global Valley Networks	CA		2005	G	PON	Voice, Data		ILEC
Golden Belt Telephone Association	KS	Occam Networks	2008	R	Active Ethernet	Triple Play		ILEC
Golden West Telephone Company	SD	Calix	2004	R	GPON	Voice, Data		ILEC
Goldfield Telephone Company	IA		2007	O, R		Triple Play	✓	ILEC
Gorham Telephone	KS	Calix	2007	R	GPON	Triple Play		ILEC
Granby Telephone Company (GTC Broadband)	MO	Occam Networks	2009	R	Active Ethernet	Triple Play		ILEC
Grand Mound Cooperative Telephone Association	IA	Calix	2005	O, R	PON	Triple Play	✓	ILEC
Grand River Mutual Telephone Corp.	MO IA		2009	R				ILEC
Grande Communications	TX	Ericsson	2005	O	PON	Triple Play		CLEC
Granite State Telephone (GSInet)	NH		2007	G, R		Voice, Data		ILEC
Great Plains Communications	NE	Enablence	2007	G, R	GPON	Voice, Data		ILEC
Greenfield Communications	AZ CA	Calix, CTDI (Alloptic)	2005	G	GPON, GEAPON	Triple Play		CLEC
Gridley Telephone	IL	Calix	2006		BPON	Triple Play		ILEC
GTel Teleconnections (Germantown Telephone)	NY	Calix	2008	R	GPON	Triple Play, Videoconferencing		ILEC
Gulfpines Communications	MS	Calix			GPON			ILEC
GVTC Communications	TX	Calix	2004	G, R, O	GPON	Triple Play, Security		ILEC
H&B Communications	KS	Calix			GPON			ILEC
Halstad Telephone Company	ND MN		2010	R		Voice, Data	✓	ILEC
Hancock Telecom	IN	Enablence, Occam Networks	2002	G	EPON, GPON	Triple Play		ILEC
Hargray Communications	SC	CTDI (Alloptic)	2004	G	EPON	Triple Play		ILEC
Harrisonville Telephone	IL	Calix	2007	G	BPON, GPON	Triple Play		ILEC
Hartelco	NE		2009	R	GPON, Active Ethernet	Voice, Data		ILEC
Hawaiian Telecom	HI	Alcatel-Lucent	2006	G, R	GPON	Triple Play		ILEC
Hayneville Telephone	AL	Enablence	2008	O	GPON	Triple Play	✓	ILEC
Heart of Iowa Communications Cooperative	IA	Calix	2005	R	BPON, GPON	Triple Play		ILEC
Hiawatha Broadband	MN	Calix	2005	O	GPON	Triple Play		CLEC
Hickory Tech (Enventis)	MN WI	Calix, Motorola	2002		BPON, GPON	Triple Play		ILEC

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Provider	States	Vendor – FTTH Electronics	Date	Greenfield/Overbuild/Replace	Technology	Services	USDA Rural Dev Loan	Prov. Type
Hickory Telephone	PA	Zhone Technologies	2009	R	GPON	Triple Play		ILEC
Highland Telephone Cooperative	VA	Enablence	2007		GPON	Triple Play		ILEC
Highland Telephone Cooperative	TN	Calix	2008		GPON	Triple Play		ILEC
Hill Country Telephone Cooperative	TX	Occam Networks	2007	G	Active Ethernet, GPON	Triple Play, Security		ILEC
Hinton Telephone	OK	Calix	2002		BPON			ILEC
Home Telephone	SC	Calix	2001	G	GPON	Triple Play		ILEC
Home Town Telephone (Home Town Cable Plus)	FL	Calix	2004	G	GPON	Triple Play, Security		CLEC
Hood Canal Telephone Company	WA	Motorola	2004	R	PON	Triple Play	✓	ILEC
Horizon Chillicothe Telephone	OH	ADTRAN, Calix	2007		GPON	Triple Play	✓	ILEC
Horry Telephone Coop	SC	Motorola, Calix	2004	G, R	PON, GPON, Active Ethernet	Triple Play		ILEC
Hotwire Communications	FL VA NJ NY PA GA SC NC MD	Calix, Motorola		G, O	GPON	Triple Play, Home automation		CLEC
Huxley Telephone	IA	Calix	2001	O, R	PON	Triple Play		ILEC
iCornerstone	GA	CTDI (Alloptic)	2004	G	EPON	Triple Play		CLEC
IdeaOne Telecom Group	ND	Calix	2002	O	GPON	Triple Play, Business services		CLEC
Indiantown Telephone System (ITS Telecom)	FL	Calix	2006	G	PON	Triple Play	✓	ILEC
InterBel Telephone Cooperative	MT					Triple Play		ILEC
Interstate Telecommunications Cooperative (SS Telecom)	SD	Calix	2006	O, R	BPON, GPON, Active Ethernet	Triple Play	✓	ILEC
Jaguar Communications	MN	Calix	2006	O	GPON	Triple Play	✓	CLEC
Johnson Telephone Company	MN	Calix	2008		GPON	Triple Play		ILEC
Kalida Telephone	OH	Calix			GPON			ILEC
Kalona Cooperative Telephone Company	IA		2009	R	GPON, Active Ethernet	Triple Play		ILEC
Kanokla Telephone	KS	Calix			GPON			ILEC
Kaplan Telephone	LA	Calix	2005	R	GPON	Triple Play		ILEC
Kerman Telephone Company	CA				Active Ethernet	Voice, Data		ILEC
KMTelecom	MN		2008	R				ILEC
Knology	AL GA TN FL SC	Ericsson, Enablence, Calix	2005	G, R, O	EPON, GPON	Triple Play, Business services		CLEC
LaHarpe Telephone	KS	Calix	2006	R	GPON	Triple Play		ILEC
Laurel Highland Telephone Company	PA	Calix	2003	R	GPON	Triple Play		ILEC
Lavalle Telephone Cooperative	WI	Occam Networks	2006	G	Active Ethernet	Triple Play	✓	ILEC
Lehigh Valley Cooperative Telephone Association	IA	Calix			GPON			ILEC
Lemonweir Valley Telephone	WI	Calix	2008	R	GPON	Triple Play		ILEC
Lexcom	NC	CTDI (Alloptic), Enablence	2007	R	RFOG, GEAPON	Triple Play		ILEC
Liberty Communications	IA	Calix	2008	R	GPON	Triple Play		ILEC
Lightnex Communications (formerly Vivid)	MT	Calix	2002	G	BPON	Triple Play		CLEC
Ligonier Telephone	IN	Calix	2008	R	GPON	Triple Play		ILEC
Lincoln County Telephone System	NV	Alcatel-Lucent	2008	G, R	GPON	Security, Triple Play		ILEC

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Provider	States	Vendor – FTTH Electronics	Date	Greenfield/Overbuild/Replace	Technology	Services	USDA Rural Dev Loan	Prov. Type
Lincoln Telephone	MT	Calix			GPON			ILEC
LISCO	IA	Occam Networks	2005	O	Active Ethernet	Triple Play	✓	CLEC
Litestream Technologies	FL	Calix	2002	G	PON	Triple Play, Security		CLEC
Long Island Fiber Exchange	NY		2007	O	Active Ethernet	Business services, Voice, Data		CLEC
Long Lines	NE	Enablence	2007	O	GEPON	Triple Play		ILEC
Lonsdale Telephone	MN	Calix			GPON			ILEC
Loretel Systems	MN	Calix	2009		GPON	Triple Play		ILEC
Lost Nation-Elwood Telephone	IA	Calix			GPON			ILEC
Mabel Telephone Cooperative	MN	Enablence	2006	R	PON	Triple Play		ILEC
Madison Telephone	KS	Calix	2009		GPON		✓	ILEC
Mahaska Communications Group	IA	Calix	2004	O	GPON, Active Ethernet	Triple Play		CLEC
Manti Tele Communication Company	UT	Enablence	2008	R	Active Ethernet	Triple Play		ILEC
Margaretville Telephone Company	NY	CTDI (Alloptic)	2007	O	RFOG	Triple Play		ILEC
Marquette-Adams Telephone Cooperative	WI	Occam Networks	2008	R	GPON, Active Ethernet	Triple Play		ILEC
Matanuska Telephone Association	AK	Calix	2007	G, R	BPON, GPON	Triple Play		ILEC
McClure Telephone Company	OH	Enablence	2006	R	GPON	Triple Play	✓	ILEC
McCook Cooperative	SD	Calix			GPON			ILEC
McDonald County Telephone Company	MO	Enablence	2009	R		Triple Play		ILEC
McDonough Telephone Cooperative	IL	Calix	2007	R	GPON	Triple Play		ILEC
Medicine Park Telephone Company	OK	Motorola	2008	G	GPON	Triple Play		ILEC
Melrose Telephone Company (diversiCOM)	MN		2009	R		Triple Play		ILEC
Metrostat Communications	NC	CTDI (Alloptic)	2006	O	GEPON	Voice, Data		CLEC
Mid-Plains Rural Telephone Cooperative	TX	Calix	2008	R	GPON	Voice, Data		ILEC
Mid-Rivers Communications	MT			R		Triple Play		ILEC
Middleburgh Telephone Company	NY	Calix, Motorola	2008	R	GPON	Triple Play		ILEC
Midstate Communications	SD	Occam Networks	2008	R	Active Ethernet	Triple Play	✓	ILEC
Midstate Telephone	ND	Calix			GPON			ILEC
Midvale Telephone	AZ	Calix	2006	G, O	BPON, GPON	Voice, Data		ILEC
Minburn Telephone	IA	Calix		R	BPON, GPON	Triple Play		ILEC
Minford Telephone Company	OH	Calix	2009		GPON			ILEC
Minnesota Valley Telephone	MN	Calix			GPON			ILEC
Missouri Telephone	MO	Allied Telesis	2006	G	Active Ethernet	Triple Play		ILEC
MoKan Dial	KS MO	Calix			BPON			ILEC
Molalla Communications Company	OR	Calix	2004	G	GPON, Active Ethernet	Voice, Data		ILEC
Momentum	AL	Alcatel-Lucent	2007	G	GPON	Triple Play, Security		CLEC
Monitor Cooperative Telephone Company	OR		2009	R		Voice, Data		ILEC
Monon Telephone Company	IN	Calix	2009		GPON			ILEC
Montana Opticom	MT	Calix	2005	G	GPON	Triple Play		CLEC
Mosaic Telecom	WI	Calix	2007	R	GPON	Triple Play		ILEC

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Provider	States	Vendor – FTTH Electronics	Date	Greenfield/Overbuild/Replace	Technology	Services	USDA Rural Dev Loan	Prov. Type
Mosinee Telephone	WI	Calix			GPON			ILEC
Moundville Telephone Company	AL		2008	G		Voice, Data		ILEC
Mountain Rural Telephone Cooperative	KY		2010	R		Voice, Data	✓	ILEC
Mountain View Telephone (Yelcot Telephone)	AR	Calix			GPON	Triple Play		ILEC
MTCO Communications	IL	Calix	2008		GPON	Voice, Data		ILEC
Mulberry Cooperative Telephone	IN		2009	R	GPON	Triple Play		ILEC
Mutual Telephone Company	KS	Calix	2008	R	GPON			ILEC
Nehalem Telecommunications	OR	Calix			BPON, GPON			ILEC
Nemont Telephone Cooperative	MT	Calix	2006	R	GPON			ILEC
Nevada Comstock Communications	NV		2008	G, O	Active Ethernet	Voice, Data		CLEC
New Hope Telephone Cooperative	AL	Calix, Occam Networks	2006	R	PON	Triple Play	✓	ILEC
New Knoxville Telephone Company	OH	Enablence	2004	R	EPON	Triple Play		ILEC
Niagara Telephone Company	WI	Calix	2008		GPON			ILEC
Nortex Communications	TX	Calix	2007	R	GPON	Triple Play	✓	ILEC
North Central Telephone Cooperative	TN	Occam Networks	2007	R	Active Ethernet	Triple Play	✓	ILEC
North Dakota Telephone Company	ND	Allied Telesis	2005	R	Active Ethernet	Triple Play		ILEC
North Penn Telephone Company	PA	Calix	2008		GPON	Triple Play		ILEC
North State Communications	NC	Calix	2005	G	BPON, GPON	Voice, Data		ILEC
North-State Telephone Company	OR	Calix		R	GPON	Voice, Data		ILEC
Northeast Florida Telephone Company	FL	Calix	2005	G	GPON	Voice, Data		ILEC
Northeast Louisiana Telephone Company	LA		2010	R	Active Ethernet	Voice, Data	✓	ILEC
Northeast Missouri Rural Telephone	MO	Occam Networks	2009	R	Active Ethernet	Triple Play	✓	ILEC
Northern Arkansas Telephone Company (NATCO)	AR	Occam Networks	2009	R	Active Ethernet	Triple Play		ILEC
Northern Telephone Cooperative	MT	Calix	2008	R	GPON			ILEC
Northwest Communications Cooperative	ND	Calix	2008	R	GPON	Triple Play		ILEC
Nsight	WI	Enablence	2003	G	Active Ethernet	Triple Play		ILEC
NTELOS	VA	Alcatel-Lucent, Tellabs, Ciena, ADTRAN	2006	R	GPON	Triple Play, Converged svcs	✓	ILEC
Nunn Telephone	CO	Calix	2010		GPON			ILEC
Omnilec	IL	Calix			BPON			CLEC
Oneida County Rural Telephone Company	NY	Calix	2010		GPON			ILEC
Openband	VA MD DC	Calix	2005	O	GPON	Triple Play, Security		CLEC
Optimum Lightpath	CT NY	Cisco, Tellabs		O	Active Ethernet	Triple Play, Business services		CLEC
Oregon Telephone	OR	Calix	2006	R	GPON		✓	ILEC
Orlando Telephone Company	FL	Enablence	2007	O	GEAPON	Triple Play		CLEC
Oxford Networks	ME	Calix	2001	O, R	GPON	Triple Play		ILEC
Palmetto Rural Telephone Cooperative	SC				GPON	Triple Play		ILEC
Panhandle Telephone Cooperative	OK		2010	R	Active Ethernet	Triple Play	✓	ILEC

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Provider	States	Vendor – FTTH Electronics	Date	Greenfield/Overbuild/Replace	Technology	Services	USDA Rural Dev Loan	Prov. Type
Panora Cooperative Telephone Association (Guthrie Telecommunications)	IA	Calix	2002	O, R	GPON	Triple Play		ILEC
Parker FiberNet	GA	Occam Networks, Calix	2006	R	GPON	Voice, Data		CLEC
Paul Bunyan Rural Telephone Cooperative	MN	Calix, Allied Telesis	2004	O, R	GPON, EPON, Active Ethernet	Triple Play	✓	ILEC
PAXIO	CA	PacketFront	2004	G, O	Active Ethernet	Voice, Data		CLEC
PBT Telecom	SC	Motorola	2005	G	GPON, BPON	Triple Play		ILEC
Pembroke Telephone Company	GA	Calix, ADTRAN	2004	G, R	GPON	Triple Play	✓	ILEC
Pembroke Telephone Cooperative	VA	Calix	2008		GPON			ILEC
Penasco Valley Telecommunications	NM	Calix	2008		GPON	Triple Play	✓	ILEC
Peoples Rural Telephone Cooperative	KY	Occam Networks	2008	R	GPON, Active Ethernet	Triple Play		ILEC
Peoples Telephone Cooperative	TX	ADTRAN	2009	R	GPON	Voice, Data		ILEC
Perry-Spencer Rural Telephone Cooperative (PSC)	IN	Enablence	2009	R	GPON, Active Ethernet	Triple Play		ILEC
Phillips County Telephone Company (PC Telcom)	CO							ILEC
Piedmont Rural Telephone Company	SC	Calix	2010		GPON			ILEC
Pine Drive Telephone Company	CO	Calix	2008		GPON	Triple Play		ILEC
Pine Tree Networks	ME	Calix			BPON			ILEC
Pineland Telephone Cooperative	GA	Occam Networks	2006	R	Active Ethernet	Triple Play		ILEC
Pinnacle Communications	AR	Calix	2005	R	GPON	Triple Play		ILEC
Pioneer Communications	KS	Calix	2009		GPON	Triple Play		ILEC
Pioneer Telephone Cooperative	OR	Calix			GPON			ILEC
Pioneer Telephone Cooperative	OK	Calix	2008		GPON			ILEC
Plainview Telephone Company (Nyecom)	NE	Calix	2009	R	GPON	Voice, Data		ILEC
Plant Telephone	GA	Calix			BPON			ILEC
Planters Telephone Company	GA	Calix	2006	G	GPON, Active Ethernet	Triple Play		ILEC
Poka Lambro Telephone Company	TX	Calix	2005	O	GPON	Voice, Data		ILEC
Polar Communications	ND MN	Occam Networks	2007	R	GPON, Active Ethernet	Triple Play		ILEC
Pottawatomie Telephone Company	OK	Calix	2009		GPON	Triple Play		ILEC
Prairie Grove Telephone Company	AR	Occam Networks	2007	G	Active Ethernet	Voice, Data		ILEC
Premier Communications	IA	Calix			GPON			ILEC
Prime Time Communications	CO UT NV MS	Calix, Alcatel-Lucent, Enablence	2004	G	GPON, EPON	Triple Play		CLEC
PrimeLink (Champlain Telephone Company)	NY	Calix, CTDI (Alloptic)	2002	O	GEPON, GPON, Active Ethernet	Triple Play		ILEC
Project Mutual Telephone Co-op	ID	Calix	2005	O, G	GPON, Active Ethernet	Triple Play		ILEC
Public Service Telephone Company	GA	Calix	2005	G	GPON	Triple Play		ILEC
Rainbow Telephone Cooperative Association	KS	Calix	2008		GPON	Triple Play		ILEC
Rainier Connect	WA	Calix	2010		GPON			ILEC
Randolph Telephone	NC	Calix	2005	G	GPON	Triple Play		ILEC

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Provider	States	Vendor – FTTH Electronics	Date	Greenfield/Overbuild/Replace	Technology	Services	USDA Rural Dev Loan	Prov. Type
Range Telephone Cooperative (Advanced Communications Technology, Dubois Telephone Exchange)	MT WY	Calix	2008	O	GPON	Triple Play		ILEC
Readlyn Telephone Company	IA	Calix	2008	R	GPON	Triple Play		ILEC
Red River Telephone	ND	Calix	2005	R	GPON	Voice, Data		ILEC
Reliance Connects (Rio Virgin Telephone/Cascade Utilities)	NV	Calix	2008		GPON	Triple Play		ILEC
Reservation Telephone Cooperative	ND	Calix	2007	R	GPON	Triple Play		ILEC
Rice Belt Telephone	AR	ADTRAN	2009		GPON	Triple Play		ILEC
Richland-Grant Telephone Cooperative	WI	Occam Networks	2006	G	Active Ethernet, GPON	Triple Play	✓	ILEC
Ridgeville Telephone Company	OH	Enablence	2006	O	GPON	Triple Play		ILEC
Ringgold Telephone	GA	Enablence, Calix	2004	G	EPON, GPON, Active Ethernet	Triple Play		ILEC
Ritter Communications	AR	Enablence	2006	G, O	Active Ethernet	Voice, Data		ILEC
River Valley Telephone Cooperative	IA	Calix	2008		GPON	Triple Play		ILEC
Roberts County Telephone Cooperative Association (RC Communications)	SD		2004			Triple Play	✓	ILEC
Rochester Telephone Company	IN	Enablence	2002	R	PON	Triple Play		ILEC
Rockwell Cooperative Telephone Association	IA	Enablence	2007	R	GPON	Triple Play		ILEC
Ronan Telephone	MT	Calix			BPON, Active Ethernet			ILEC
Royal Telephone Company	IA	Calix	2005	R	GPON	Triple Play		ILEC
RT Communications	WY	Enablence, Calix	2006	R	GPON	Voice, Data		ILEC
RTC Communications	IN	Calix	2005	R	GPON	Triple Play		ILEC
Runestone Telephone Association	MN	Calix	2007	R	GPON	Triple Play		ILEC
Rural Telephone (Nex-Tech)	KS	Calix, Occam Networks	2001	O, R	Active Ethernet, GPON	Triple Play	✓	ILEC
Rye Telephone Company	CO	Calix	2002	R	GPON	Triple Play		ILEC
S&T Telephone Cooperative	KS	Calix	2008	R	GPON	Triple Play		ILEC
Saddleback Communications	AZ	Calix	2008		GPON			ILEC
San Carlos Apache Telecom	AZ	Calix			GPON			ILEC
San Isabel Telecom	CO	Calix	2002	G	PON	Triple Play		CLEC
Sandwich Isles Telecom	HI	Calix			GPON			ILEC
Santa Rosa Telephone Cooperative	TX	Calix	2005	O	GPON	Triple Play		ILEC
Santel Communications	SD	Enablence	2005	O	EPON	Triple Play	✓	ILEC
Scio Mutual Telephone Association	OR	Calix	2004	R	GPON	Triple Play		ILEC
Scott County Telephone Coop	VA	Enablence, Calix	2004	R	EPON, GPON, Active Ethernet	Triple Play	✓	ILEC
SCTelcom (South Central Telephone)	KS	Calix	2002	R	GPON, Active Ethernet	Voice, Data	✓	ILEC
Sebastian (Audeamus)	CA	Occam Networks	2009	G		Triple Play	✓	ILEC
Shenandoah Telecommunications	VA WV	Enablence, Motorola	2006	G	EPON	Triple Play, Security		ILEC
Sherwood Mutual Telephone Association	OH	Calix		R	GPON	Triple Play		ILEC
Sierra Telephone	CA	Calix	2010		GPON			ILEC

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Provider	States	Vendor – FTTH Electronics	Date	Greenfield/Overbuild/Replace	Technology	Services	USDA Rural Dev Loan	Prov. Type
Silver Star Communications	WY	Calix	2005	G	GPON	Triple Play		ILEC
Siren Telephone	WI	Allied Telesis	2008	R	Active Ethernet	Triple Play		ILEC
Siskiyou Telephone	CA			R				ILEC
Skyline Membership Corporation	NC	Allied Telesis, Calix	2004	R	PON	Triple Play		ILEC
Sledge Telephone Company	MS	Occam Networks	2009	R	Active Ethernet	Voice, Data		ILEC
Slic Network Solutions (Nicholville Telephone Company)	NY	Occam Networks	2009	O	GPON	Triple Play		ILEC
Smart City	FL	Calix		G	BPON, GPON	Triple Play		ILEC
Smithville	IN	Calix	2008	R	GPON	Triple Play	✓	ILEC
Solarus	WI	Calix			GPON	Triple Play		ILEC
Sonic.net	CA		2010	O	Fiber to Building	Data		CLEC
South Central Communications	UT	Calix	2002	G	GPON	Voice, Data		ILEC
South Central Rural Telephone Cooperative	KY	ADTRAN	2009	R	GPON	Triple Play		ILEC
South Plains Telephone Cooperative	TX	Calix		G	GPON			ILEC
South Slope Cooperative Communications	IA	Calix		R	GPON, Active Ethernet	Triple Play		ILEC
Southeast Nebraska Telephone Company	NE		2009	R		Voice, Data		ILEC
Southern Kansas Telephone	KS	Occam Networks	2008	R	Active Ethernet, GPON	Voice, Data		ILEC
Southern Montana Telephone Company	MT	Calix	2009	R	GPON	Voice, Data	✓	ILEC
Southwest Michigan Communications (Bloomingdale Telephone)	MI	Calix		O	GPON	Triple Play	✓	ILEC
Spring Grove Communications	MN	Calix	2007	R	GPON	Triple Play		ILEC
Spring Valley Telephone	WI		2009	R		Triple Play		ILEC
Spruce Knob Seneca Rocks Telephone	WV	Calix	2008	R	GPON	Triple Play	✓	ILEC
SRT Communications	ND	Zhone Technologies, Calix	2008	G, R	Active Ethernet, GPON			ILEC
St. John Telephone Company	WA		2007	R			✓	ILEC
St. Paul Cooperative Telephone Association	OR	Calix	2008		GPON			ILEC
Stanton Telecom	NE	Calix	2010	R	GPON	Triple Play		ILEC
State Telephone Company	NY	Calix	2009		GPON			ILEC
Stayton Cooperative Telephone	OR	Occam Networks	2009	R	Active Ethernet, GPON	Triple Play		ILEC
Strata Networks (formerly UBTA-UBET Communications)	UT	Calix, Occam Networks	2007	G	Active Ethernet, GPON	Voice, Data		ILEC
Stratford Mutual Telephone Company	IA	Zhone Technologies	2005	R	GPON	Triple Play	✓	ILEC
Sunflower Broadband	KS	Calix, Motorola	2003		GPON			CLEC
SureWest Communications	CA KS MO	Calix, Allied Telesis	2001	O, R, G	PON, Active Ethernet	Triple Play		ILEC
Surry Telephone Membership Corporation	NC	Allied Telesis	2008	R	GEAPON, Active Ethernet	Triple Play		ILEC
Swisher Telephone Company	IA	Calix	2009	R	GPON	Triple Play		ILEC
Syringa Networks	UT ID		2010	O	Active Ethernet			CLEC
T2 Communications	MI	Calix	2005	G, O	GPON	Triple Play		CLEC

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Provider	States	Vendor – FTTH Electronics	Date	Greenfield/Overbuild/Replace	Technology	Services	USDA Rural Dev Loan	Prov. Type
Table Top Telephone	AZ	Calix	2010		GPON, Active Ethernet			ILEC
Tamarack Video & Telecom	ID	Calix	2008	G	GPON	Triple Play		CLEC
Taylor Telephone Cooperative	TX	Zhone Technologies	2007	R	GPON	Voice, Data		ILEC
TDS Telecom	WI MN	Calix, Ericsson	2005	G	GPON	Triple Play		ILEC
Tech Valley Communications	NY	Calix	2006	O	GPON	Voice, Data		CLEC
TelAtlantic	WV	Tellabs	2006	G	BPON	Triple Play		ILEC
Telepak Networks	MS	Calix	2005	O	GPON	Triple Play		ILEC
Telephone Electronics Corporation (TEC)	MS AL TN	ADTRAN	2008	R	GPON	Triple Play		ILEC
Teton Telecom	ID	Calix	2004	G	GPON	Triple Play		ILEC
Thacker-Grigsby Telephone	KY	Calix			GPON			ILEC
Three River Telco	NE		2008	R			✓	ILEC
Tohono O'odham Utility Authority	AZ		2010	R			✓	ILEC
Toledo Telephone	WA	Calix	2006	O	GPON	Triple Play		ILEC
Topsham Telephone	VT	Calix	2006		GPON	Triple Play	✓	ILEC
Tri County Telephone (TCT West)	WY	Calix	2004	R	GPON	Triple Play	✓	ILEC
Tri-County Telephone Association	KS	Occam Networks	2009	R	GPON, Active Ethernet	Triple Play		ILEC
Triangle Telephone Cooperative	MT		2007	R	Active Ethernet, GPON	Triple Play		ILEC
TriCounty Telecom	NC		2009	G, R	GPON	Triple Play		ILEC
Trumansburg Telephone	NY	Tellabs, Occam Networks	2009	R	GPON, Active Ethernet	Triple Play		ILEC
Truvista Communications	SC	Calix			GPON	Triple Play		ILEC
TSC	OH	Calix	2003	O	GPON	Triple Play		ILEC
Tularosa Basin Telephone Company	NM	Occam Networks	2006	R	Active Ethernet	Triple Play	✓	ILEC
Twin Valley Telephone	KS	Allied Telesis	2006	R, O	Active Ethernet, GEAPON	Triple Play		ILEC
Union River Telephone Company	ME	Calix	2008	R	GPON	Voice, Data	✓	ILEC
Union Springs Telephone	AL	Calix, Occam Networks	2001	R	GPON, Active Ethernet	Triple Play		ILEC
Union Telephone	NH	Enablence	2007	R	Active Ethernet	Triple Play		ILEC
United Telephone Company	TN	Calix	2004	G	GPON	Triple Play		ILEC
United Telephone Mutual Aid Corporation	ND	Allied Telesis, Calix	2008	R	Active Ethernet	Triple Play		ILEC
United Telesystems	GA	Alcatel-Lucent	2003	O	BPON	Triple Play		CLEC
Upper Sioux Community	MN	Calix	2009		GPON			ILEC
US SONET	IL	Enablence	2003	O	PON	Triple Play	✓	CLEC
Valley Telecom Group	AZ	Enablence	2005	R	EPON, GPON, Active Ethernet	Triple Play	✓	ILEC
Valley Telecommunications Cooperative	SD	Calix	2008	R	GPON	Triple Play		ILEC
Valley Telephone Cooperative	TX	Enablence	2005	G, R	GPON, Active Ethernet	Triple Play	✓	ILEC
Velocity Telephone	MN		2010	O	Active Ethernet	Triple Play		CLEC
Venture Communications Cooperative	SD	Calix	2006	R	GPON			ILEC
Veracity Networks	UT	Telco Systems	2005	G	Active Ethernet	Triple Play, Gaming		CLEC
Vermont Telephone	VT	Calix	2007	R	BPON, GPON			ILEC

INDEPENDENT TELCOS

Provider	States	Vendor – FTTH Electronics	Date	Greenfield/Overbuild/Replace	Technology	Services	USDA Rural Dev Loan	Prov. Type
Volcano Telephone	CA	Calix	2010		GPON			ILEC
Wabash Mutual Telephone	OH	Enablence, Occam Networks	2005	O, R	EPON, GPON, Active Ethernet	Triple Play	✓	ILEC
Wahkiakum West Telephone	WA			R				ILEC
Waitsfield and Champlain Valley Telecom	VT	Enablence	2007	G	Active Ethernet	Voice, Data		ILEC
Walnut Communications	IA		2009	O				ILEC
Wamego Telecommunications	KS	Calix	2002	R	GPON	Triple Play		ILEC
Warwick Valley Telephone Communications	NY	Enablence, Occam Networks	2006	O	Active Ethernet, GPON	Triple Play		ILEC
Webster-Calhoun Cooperative Telephone Association	IA	Calix	2005	R	GPON	Triple Play		ILEC
West Carolina Tel	SC		2008	R	GPON, Active Ethernet	Triple Play		ILEC
West Central Telephone	MN	Calix	2005	R	PON	Triple Play		ILEC
West Plains Telecommunications (Five Area Telephone Cooperative)	TX	CTDI (Alloptic)	2006	R	GPON	Triple Play	✓	ILEC
West River Cooperative Telephone Company	SD	Calix	2007	R	GPON			ILEC
West Texas Rural Telephone Cooperative (WT Services)	TX	Calix	2007	O	GPON	Triple Play		ILEC
West Wisconsin Telcom Cooperative	WI	Calix	2007	R	GPON			ILEC
Westel Fiber	ID			G		Triple Play		CLEC
WesTel Systems	IA	Calix	2009		GPON			ILEC
Westphalia Telephone	MI	Occam Networks	2006	O	Active Ethernet, GPON			ILEC
Wide Open West (Sigecom)	IN	Motorola, Calix, Occam Networks	2001	O	GPON	Triple Play		CLEC
Wiggins Telephone	CO	Calix	2008	R	GPON	Voice, Data	✓	ILEC
Wilkes Telephone & Electric	GA	Calix	2006	R	GPON	Triple Play		ILEC
Windstream Communications NC SC TX	AL AR FL GA KY NE	Calix	2006	G	GPON	Voice, Data		ILEC
Windwave Communications	OR	Calix	2004	O	PON	Triple Play		CLEC
Winn Telephone	MI	Calix		O	BPON			ILEC
Winnebago Cooperative Telecom Association	IA	Calix			GPON			ILEC
Wittenberg Telephone	WI	Calix			BPON			ILEC
Woodstock Telephone	MN	Tellabs	2008	R	GPON	Triple Play		ILEC
Xfone (NTS, Pride Network)	TX	Calix	2003	G, O	GPON	Triple Play	✓	CLEC
XIT Rural Telephone Cooperative	TX	Calix	2008	R	GPON	Triple Play	✓	ILEC
Yadkin Valley Telecom	NC	Zhone Technologies	2007		GPON	Triple Play		ILEC
Yucca Telecom (Roosevelt County Rural Telephone Cooperative)	NM	Calix	2005	R	GPON	Voice, Data	✓	ILEC
Zial Networks	ID UT		2003	G, O	Active Ethernet	Triple Play		CLEC
Zito Media	PA		2008	O		Voice, Data		CLEC
Zona Communications	AZ	Calix	2005	G	GPON	Voice, Data	✓	ILEC
Zoomy Communications	MS MT ID CO AZ NM KS WA TX	Calix, Alcatel-Lucent	2002	G, O	GPON	Triple Play		CLEC