Radiation Pattern Envelope

Antenna Type Number HP1-370

1.0 Foot Antenna 37.0 - 40.0 GHz Single Polarized

Gain: 39.5 ± 0.2 dBi at 38.5 GHz

——— Envelope for a Horizontally Polarized Antenna (HH,HV)

– – – – Envelope for a Vertically Polarized Antenna (VV,VH)

For further information, ask for Andrew Bulletin 1032, "Radiation Pattern Envelopes."

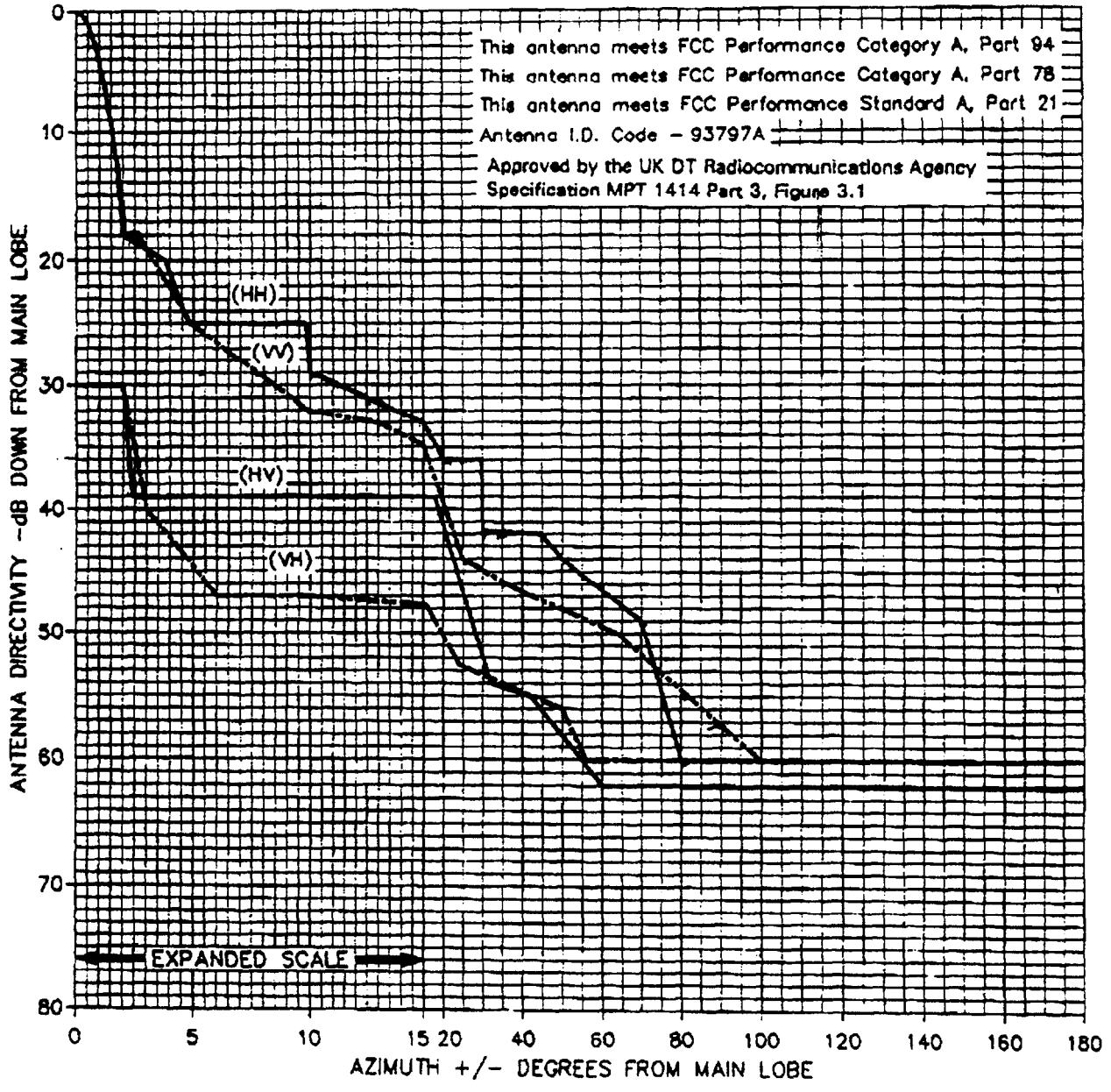
ANDREW CORPORATION

ANDREW

RPE 3797

Approved

10 FEBRUARY 1994



Radiation Pattern Envelope

Antenna Type Number HP2-370

2.0 Foot Antenna 37.0 - 40.0 GHz Single Polarized

Gain: 44.3 ± 0.2 dBi at 38.5 GHz

——— Envelope for a Horizontally Polarized Antenna (HH,HV)

– – – – Envelope for a Vertically Polarized Antenna (VV,VH)

For further information, ask for Andrew Bulletin 1032, "Radiation Pattern Envelopes."

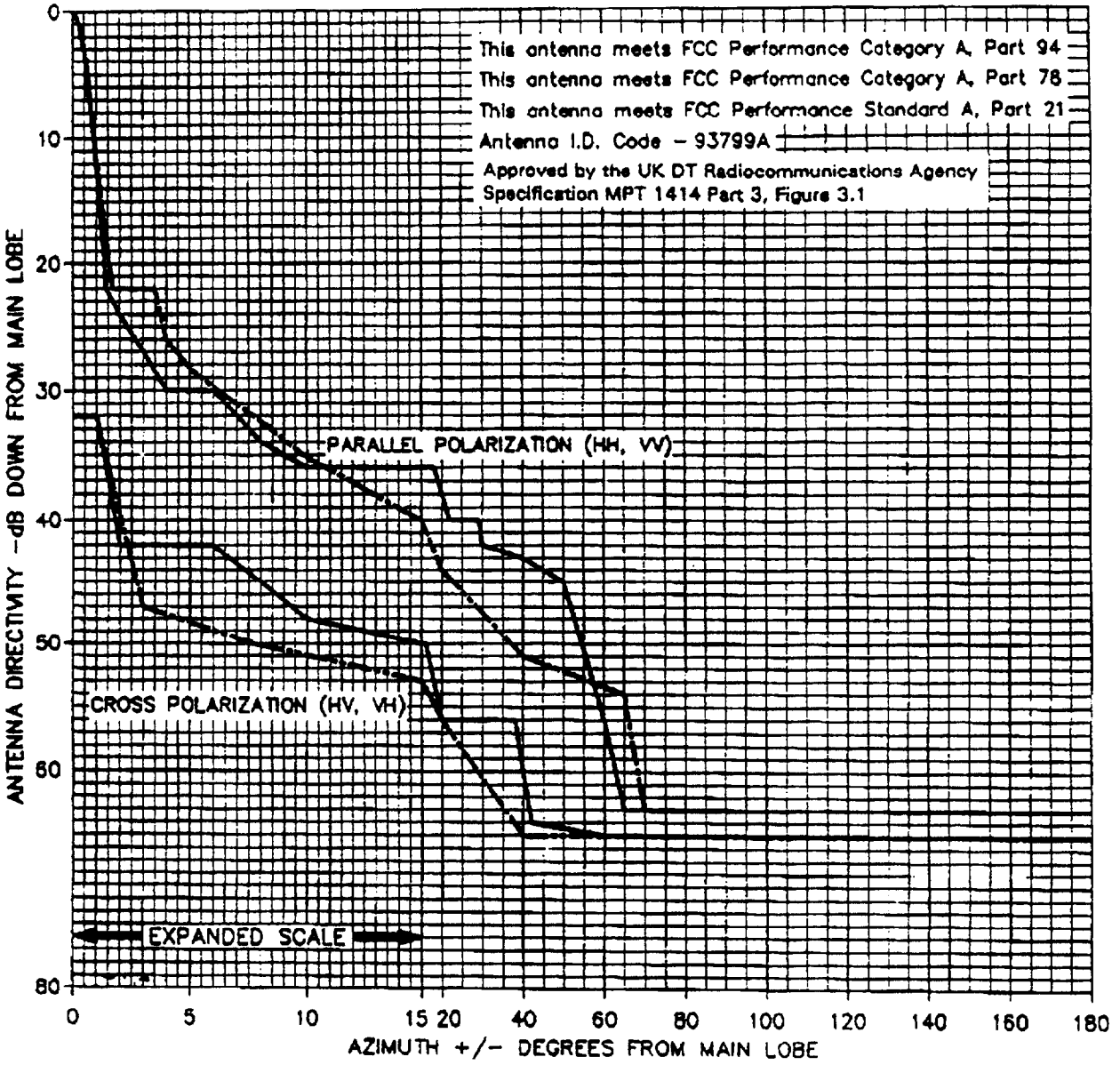
ANDREW CORPORATION

ANDREW

RPE - 3799

Approved

10 FEBRUARY 1994



APPENDIX E

WINSTAR

COMMUNICATIONS, INC.

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WINSTAR AND BELL ATLANTIC SIGN INTERCONNECT AGREEMENT FOR PENNSYLVANIA

Agreement Covers Philadelphia and Pittsburgh Markets

WinStar Now Has Interconnect Agreements Covering 13 of Its Major Markets

NEW YORK – DECEMBER 4, 1996, WINSTAR COMMUNICATIONS, INC. (NASDAQ-WCII) and Bell Atlantic (NYSE-BEL) today announced that they have signed an interconnect agreement covering Pennsylvania in which Bell Atlantic is the incumbent local exchange carrier. The agreement establishes the terms under which WinStar and Bell Atlantic will interconnect their networks. WinStar plans to offer competitive telecommunications services in Philadelphia and Pittsburgh beginning in 1997.

WinStar now has interconnect agreements covering 13 of the 41 major market areas in which it plans to roll out its competitive local exchange carrier (CLEC) business over the next three years and is negotiating additional agreements with a number of local exchange companies.

"We look forward to providing business customers with the same excellent customer service, pricing, simplified billing, and value-added telecommunications services which have been received so well in our initial launch in New York and other cities," said Dave Schmieg, President and Chief Operating Officer of WinStar's operating subsidiary, WinStar Telecommunications. "We are excited that these new customers in Pennsylvania will be able to choose an integrated package of local, long distance, and enhanced communications and information services from WinStar."

WinStar's CLEC business is based on its Wireless Fiber℠ service, which is a broadband local communications service provided using WinStar's licenses in the 38 GHz band. Wireless Fiber service is the functional equivalent of fiber in terms of reliability, data transmission quality, and bandwidth provided to the end user.

WinStar currently holds 38 GHz licenses in 41 of the top 45 U.S. markets, covering 110 million people. Upon completion of pending acquisitions, each of which is subject to FCC approval, WinStar will have license coverage in 46 of the top 50 markets in the country, including the top 31, and more than 160 major market areas in total, covering approximately 170 million people, and approximately 575 million channel pops (population coverage multiplied by the number of channels).

WinStar Communications, Inc. is a national local communications company, serving business customers, long distance carriers, fiber-based competitive access providers, mobile communications companies, local telephone companies, and other customers with broadband local communications needs. The company provides its Wireless Fiber℠ services using its licenses in the 38 GHz spectrum. The company also provides long distance services and various information services and entertainment content.

Wireless Fiber is a service mark of WinStar Communications, Inc.

WINSTAR

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WINSTAR LAUNCHES COMPETITIVE TELEPHONE SERVICE IN NEW YORK CITY

Building National Switched Network

New Local Telephone Company Delivers Superior Customer Service

NEW YORK – NOVEMBER 13, 1996, WINSTAR COMMUNICATIONS, INC. (NASDAQ-WCII) today announced the launch of its New York City network to provide small and medium-sized businesses with a competitive single source for local, long distance, Internet access services and more.

"WinStar's goal is to simplify telecommunications for business customers and provide them with a viable choice. WinStar is dedicated to providing more responsive service, integrated billing, and faster access to high-bandwidth communication services," said William J. Rouhana, Jr., Chairman and Chief Executive Officer, WinStar Communications. "We provide the level of service that business customers have a right to expect."

In October 1996, WinStar began routing the first customer calls through its switching and transmission facility. WinStar is building a national switched network utilizing 5ESS switch technology from Lucent Technologies and its own proprietary Wireless Fiber℠ service that can be installed more quickly and less expensively than fiber optic lines. The WinStar network delivers quality, reliability and value -- a distinct alternative to NYNEX.

"WinStar offers small and medium-sized business customers the simplicity of one-stop service for local, long distance, high-speed Internet access services and more at a lower cost. More importantly, WinStar provides all these services with a passionate commitment to customer satisfaction," said Dave Schmieg, President and Chief Operating Officer of WinStar's operating subsidiary, WinStar Telecommunications.

WinStar has also initiated pre-launch service in Boston, Chicago, Atlanta, Los Angeles and San Diego. The company will be deploying its network in 41 U.S. markets over the next three years and will utilize its own Wireless Fiber service, which is a broadband

wireless local communications service provided through WinStar's licenses in the 38 GHz frequency band to connect customers. Wireless Fiber service is the functional equivalent of fiber optic cable in terms of reliability, data transmission quality, and bandwidth provided to the end user.

WinStar currently holds 38 GHz licenses in 41 of the top 45 markets in the United States, covering 110 million people. Upon completion of pending acquisitions, each of which is subject to FCC approval, WinStar will have license coverage in 46 of the top 50 markets, and more than 160 major market areas in total, covering approximately 170 million people.

WinStar Communications, Inc. is a national local communications company, offering competitive telecommunications services to business customers, long distance carriers, fiber-based competitive access providers, mobile communications companies, local telephone companies, and other customers with broadband local communications needs. The company provides its Wireless Fiber services using its licenses in the 38 GHz spectrum. The company also provides long distance services and various information services and entertainment content.

Wireless Fiber is a service mark of WinStar Communications, Inc.

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ACSI SIGNS MASTER SERVICE AGREEMENT WITH WINSTAR

American Communications Services Using WinStar's Wireless Fiber Service as Complement to Its Fiber Network

Forecasts Purchase of Several Thousand Circuits

NEW YORK – NOVEMBER 6, 1996, WINSTAR COMMUNICATIONS, INC. (NASDAQ-WCII) today announced that it has reached agreement for provision of its Wireless Fiber℠ service to American Communications Services, Inc. (NASDAQ-ACNS). Based in Annapolis Junction, Maryland, American Communications Services, Inc. (ACSI) is a competitive local exchange carrier (CLEC) offering local telecommunications services and data network solutions to business and government customers in mid-sized markets principally throughout the southern half of the United States. ACSI currently has 30 local fiber optic networks in service or under construction and plans to have a total of 50 networks by mid-1998.

Under the five year agreement, ACSI is forecasting purchase of several thousand T-1 and DS-3 circuits, to be provided by WinStar using its 38 GHz Wireless Fiber℠ service. The master service agreement signed by the two companies sets forth the specifications, network management, provisioning, and other terms under which WinStar will provide ACSI with services.

ACSI has been using WinStar's Wireless Fiber℠ circuits during the past year for provision of service to a number of customers. It will use WinStar's wireless service for a variety of applications, including to connect its fiber to off-network buildings and also for diverse routing as a back-up to its fiber in certain applications. ACSI also plans to use Wireless Fiber service to provide Internet access and local switched services. ACSI intends to utilize WinStar's service in those markets where both ACSI and WinStar are operational.

WinStar's Wireless Fiber service is a broadband local communications service provided using WinStar's licenses in the 38 GHz band. Wireless Fiber service is the functional

equivalent of fiber in terms of reliability, data transmission quality, and bandwidth provided to the end user.

WinStar currently holds 38 GHz licenses in 41 of the top 45 markets in the United States, covering 110 million people. Upon completion of pending acquisitions, each of which is subject to FCC approval, WinStar will have license coverage in 46 of the top 50 markets, including the top 31, and more than 160 major market areas in total, covering approximately 170 million people, and approximately 573 million channel pops (population coverage multiplied by the number of channels).

WinStar Communications, Inc. is a national local communications company, serving business customers, long distance carriers, fiber-based competitive access providers, mobile communications companies, local telephone companies, and other customers with broadband local communications needs. The company provides its Wireless Fiber services using its licenses in the 38 GHz spectrum. The company also provides long distance services and various information services and entertainment content.

Except for any historical information contained herein, the matters discussed in this press release contain forward-looking statements that involve risks and uncertainties which are described in the company's SEC reports, including the 10-KSB for the period ended December 31, 1995, and the 10-Qs for the periods ended March 31, 1996 and June 30, 1996.

Wireless Fiber is a service mark of WinStar Communications, Inc.

WINSTAR

COMMUNICATIONS, INC.

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PACIFIC BELL SIGNS MASTER SERVICE AGREEMENT WITH WINSTAR

Forecasted Demand for T-1s and DS-3s Represents Major Opportunity for WinStar

Enables Pacific Bell to More Rapidly Deploy Services in Local Loop

NEW YORK – OCTOBER 25, 1996, WINSTAR COMMUNICATIONS, INC. (NASDAQ-WCII) today announced that Pacific Bell has signed a master service agreement with WinStar. The three-year contract sets forth terms and conditions for purchasing WinStar's wireless telecommunications services to extend the reach of Pacific Bell's network wherever it needs additional capacity.

Pacific Bell completed testing and operational review of WinStar's Wireless Fiber℠ service capabilities in September. Pacific Bell is forecasting potential demand for several thousand T-1 and DS-3 lines that will give its customers greater capacity for voice, data, and video applications. WinStar will use its licenses in the 38 GHz band, in addition to other parts of the spectrum, to provide wireless services to Pacific Bell.

The explosive demand for broadband services in California, fueled by the Internet, will continue to increase the need for capacity in Pacific Bell's network. WinStar plans to hire a number of additional engineers and support personnel to meet Pacific Bell's requirements.

"California customers are some of the most communications intensive in the country, and we're aggressively seeking ways to provide them with more of the services they want, when they want," said Lee Bauman, Vice President, Local Competition, Pacific Bell. "This new relationship with WinStar makes it possible for us to better meet the

growing demand for voice and data offerings, and speed up their deployment throughout California, at a reasonable cost."

"We are providing our wireless services to a number of regional Bell operating companies and independent telephone companies, for use in their telephone and cellular networks," said Robert McGuire, President and Chief Operating Officer, WinStar Wireless, Inc., WinStar's wholesale telecommunications business. "We are delighted that Pacific Bell is looking to take advantage of WinStar's services and support capabilities. As customer demand for increased capacity accelerates, we expect other telephone companies to follow Pacific Bell's lead in preparing to strategically deploy wireless technology in the local loop."

Pacific Bell is a subsidiary of the Pacific Telesis Group (NYSE-PAC), a diversified telecommunications corporation headquartered in San Francisco.

WinStar Communications, Inc. is a national local communications company, serving business customers, long distance carriers, fiber-based competitive access providers, mobile communications companies, local telephone companies, and other customers with broadband local communications needs. The company provides its Wireless Fiber services using its licenses in the 38 GHz spectrum. The company also provides long distance services and various information services and entertainment content.

Except for any historical information contained herein, the matters discussed in this press release contain forward-looking statements that involve risks and uncertainties which are described in the company's SEC reports, including the 10-KSB for the period ended December 31, 1995, and the 10-Qs for the periods ended March 31, 1996 and June 30, 1996.

Wireless Fiber is a service mark of WinStar Communications, Inc.

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WINSTAR AND BELLSOUTH SIGN INTERCONNECT AGREEMENT FOR ENTIRE BELLSOUTH REGION

Expands WinStar's Competitive Local Telecommunications Service in Nine Southern States

NEW YORK – AUGUST 26, 1996, WINSTAR COMMUNICATIONS, INC. (NASDAQ-WCII) and BellSouth Corp. (NYSE-BLS) today announced that they have signed a regionwide interconnect agreement covering all nine southern states in which BellSouth provides service, including four major markets in which WinStar holds 38 GHz licenses – Atlanta, Miami, Memphis, and Jacksonville. This agreement allows WinStar to provide local telecommunications services to business and residential customers in competition with BellSouth.

This is WinStar's sixth interconnect agreement with an incumbent local exchange company. WinStar is negotiating additional agreements with a number of local exchange companies, and now has interconnect agreements covering ten of the 41 major market areas in which it plans to roll out its CLEC business over the next three years. WinStar currently has competitive local exchange carrier (CLEC) authorization in three BellSouth states -- Georgia, Florida, and Tennessee.

The agreement provides for WinStar's interconnection at any technically feasible point in the BellSouth system and sets the price each company will pay for completing a phone call on the other's network. It also sets the terms and conditions under which WinStar will be able to buy BellSouth unbundled network elements for use in its own network, and provides for resale of BellSouth services by WinStar to its customers.

"We are excited that business customers in three additional states will be able to select an integrated package of local, long distance, and enhanced communications and information services from WinStar," said Dave Schmieg, President and Chief Operating Officer of WinStar Telecommunications. "We believe these new customers will find real value in our competitive rates while receiving excellent service, simplified billing, and value-added telecommunications services."

WinStar's CLEC business is based on its Wireless Fiber℠ service which is a broadband local communications service provided using WinStar's licenses in the 38 GHz band. Wireless Fiber service is the functional equivalent of fiber in terms of reliability, data transmission quality, and bandwidth provided to the end user.

WinStar currently holds 38 GHz licenses in 41 of the top 45 U.S. markets, covering 110 million people. Upon completion of pending acquisitions, each of which is subject to FCC approval, WinStar will have license coverage in 46 of the top 50 markets in the country, including the top 31, and more than 160 major market areas in total, covering approximately 170 million people, and approximately 575 million channel pops (population coverage multiplied by the number of channels).

WinStar Communications, Inc. is a local telecommunications company. WinStar Wireless is a competitive access provider which provides its Wireless Fiber℠ "last mile" telecommunications services, using its 38 GHz licenses, to long distance carriers, competitive access providers, mobile communications companies, local telephone companies, and other customers with broadband local communications needs. WinStar Telecommunications provides telecommunications services in competition with the incumbent local telephone companies. WinStar Gateway Network provides long distance telephone service. WinStar New Media creates and distributes information services and entertainment content as a complement to WinStar's telecommunications activities.

Wireless Fiber is a service mark of WinStar Communications, Inc.

WINSTAR COMMUNICATIONS, INC.

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WINSTAR AND NYNEX SIGN INTERCONNECT AGREEMENT FOR MASSACHUSETTS

Expands WinStar's Competitive Local Telecommunications Service to Boston

NEW YORK – AUGUST 22, 1996, WINSTAR COMMUNICATIONS, INC. (NASDAQ-WCII) and NYNEX (NYSE-NYN) today announced that they have signed an interconnect agreement in Massachusetts, which allows WinStar to provide local telecommunications services to business and residential customers in competition with NYNEX. WinStar is already offering competitive local telecommunications services in New York, as a reseller, and plans to initiate service in Boston next month.

This is WinStar's fifth interconnect agreement with an incumbent local exchange company. WinStar is negotiating additional agreements with a number of local exchange companies, and now has interconnect agreements covering eight of the 41 major market areas in which it plans to roll out its competitive local exchange carrier (CLEC) business over the next three years.

The agreement provides for WinStar's interconnection at any technically feasible point in the NYNEX system and sets the price each company will pay for completing a phone call on the other's network. It also sets the terms and conditions under which WinStar will be able to buy NYNEX unbundled network elements for use in its own network, and provides for resale of NYNEX services by WinStar to its customers.

"We are pleased to deliver Boston business customers an integrated package of local, long distance, and enhanced communications services," said Dave Schmieg, President and Chief Operating Officer of WinStar Telecommunications. "We look forward to providing customers in the greater Boston area with excellent service, simplified billing, and value-added telecommunications services at competitive rates."

WinStar's CLEC business is based on its Wireless Fiber℠ service which is a broadband local communications service provided using WinStar's licenses in the 38 GHz band. Wireless Fiber service is the functional equivalent of fiber in terms of reliability, data transmission quality, and bandwidth provided to the end user.

WinStar currently holds 38 GHz licenses in 41 of the top 45 U.S. markets, covering 110 million people. Upon completion of pending acquisitions, each of which is subject to FCC approval, WinStar will have license coverage in 46 of the top 50 markets in the country, including the top 31, and more than 160 major market areas in total, covering approximately 170 million people, and approximately 575 million channel pops (population coverage multiplied by the number of channels).

WinStar Communications, Inc. is a local telecommunications company. WinStar Wireless is a competitive access provider which provides its Wireless Fiber[SM] "last mile" telecommunications services, using its 38 GHz licenses, to long distance carriers, competitive access providers, mobile communications companies, local telephone companies, and other customers with broadband local communications needs. WinStar Telecommunications provides telecommunications services in competition with the incumbent local telephone companies. WinStar Gateway Network provides long distance telephone service. WinStar New Media creates and distributes information services and entertainment content as a complement to WinStar's telecommunications activities.

Wireless Fiber is a service mark of WinStar Communications, Inc.

WINSTAR

COMMUNICATIONS, INC.

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WINSTAR AND NYNEX SIGN INTERCONNECT AGREEMENT FOR NEW YORK

Expands WinStar's Competitive Local Telecommunications Service in New York Metropolitan Area and Buffalo

NEW YORK – AUGUST 13, 1996, WINSTAR COMMUNICATIONS, INC. (NASDAQ-WCII) and NYNEX (NYSE-NYN) today announced that they have signed an interconnect agreement in New York, which allows WinStar to provide local telecommunications services to business and residential customers in competition with NYNEX. WinStar is already offering competitive local telecommunications services in New York City, as a reseller, and is scheduled to install its first switch in October, in Manhattan.

This is WinStar's fourth interconnect agreement with an incumbent local exchange company. WinStar is negotiating additional agreements with a number of local exchange companies, and now has interconnect agreements covering seven of the 41 major market areas in which it plans to roll out its competitive local exchange carrier (CLEC) business over the next three years.

The agreement provides for WinStar's interconnection at any technically feasible point in the NYNEX system and sets the price each company will pay for completing a phone call on the other's network. It also sets the terms and conditions under which WinStar will be able to buy NYNEX unbundled network elements for use in its own network, and provides for resale of NYNEX services by WinStar to its customers.

"We are excited about offering New York business customers an integrated package of local, long distance, and enhanced communications and information services," said Dave Schmieg, President and Chief Operating Officer of WinStar Telecommunications. "We look forward to providing New Yorkers with excellent service, simplified billing, and value-added telecommunications services at competitive rates."

"Consumers are the real winners here. This agreement will provide more choice for customers in local markets and paves the way for NYNEX to eventually provide long distance services in New York." said Jack Goldberg, NYNEX Vice President - Wholesale Markets. "NYNEX has been a pioneer in interconnection issues as we seek to develop a strong wholesale market and realize the competitive opportunities envisioned by the Telecommunications Act of 1996."

WinStar's CLEC business is based on its Wireless Fiber℠ service which is a broadband local communications service provided using WinStar's licenses in the 38 GHz band. Wireless Fiber service is the functional equivalent of fiber in terms of reliability, data transmission quality, and bandwidth provided to the end user.

WinStar currently holds 38 GHz licenses in 41 of the top 45 U.S. markets, covering 110 million people. Upon completion of pending acquisitions, each of which is subject to FCC approval, WinStar will have license coverage in 46 of the top 50 markets in the country, including the top 31, and more than 160 major market areas in total, covering approximately 170 million people, and approximately 575 million channel pops (population coverage multiplied by the number of channels).

NYNEX is a global communications and media company that provides a full range of services in the northeastern United States and high-growth markets around the world, including the United Kingdom, Thailand, Gibraltar, Greece, Indonesia, the Philippines, Poland, Slovakia and the Czech Republic. The company is a leader in telecommunications, wireless communications, directory publishing and video entertainment and information services.

WinStar Communications, Inc. is a local telecommunications company. WinStar Wireless is a competitive access provider which provides its Wireless Fiber℠ "last mile" telecommunications services, using its 38 GHz licenses, to long distance carriers, competitive access providers, mobile communications companies, local telephone companies, and other customers with broadband local communications needs. WinStar Telecommunications provides telecommunications services in competition with the incumbent local telephone companies. WinStar Gateway Network provides long distance telephone service. WinStar New Media creates and distributes information services and entertainment content as a complement to WinStar's telecommunications activities.

Wireless Fiber is a service mark of WinStar Communications, Inc.

The WinStar Network -- Background

On November 13, 1996, WinStar Communications, Inc. announced the launch of its network in New York City to provide small and medium-sized businesses with a competitive single source for local, long-distance and Internet access services.

Overview

The WinStar local service market entry plan is enhanced by the advantages of it's Wireless Fiber[sm] service. In major cities across the United States today, WinStar provides broadband local access services to leading carriers.

In order to gain initial market penetration in a new city with local exchange services, WinStar will use a variety of methods to connect to the local exchange company. WinStar initially resells the local exchange switched services of other service providers, such as incumbent or competitive local exchange carriers (LEC/CLEC).

On an aggressive schedule, WinStar plans to install its own switching and transmission infrastructure that enables the company to provide its own local exchange services in that city. Following WinStar's November 13th announcement of its first switch in New York City, WinStar will install an additional 40 switches in various U.S. cities over the next three years. WinStar will install its proprietary Wireless Fiber service to provide high capacity bandwidth communications services to buildings not currently served by traditional fiber optic service providers.

Digital Switch

In July 1996, WinStar entered into a three-year agreement with Lucent Technologies Inc. ("Lucent") allowing WinStar to purchase the switching systems and related equipment and software it will need to build its local market infrastructure. The WinStar network's foundation is based on Lucent's 5ESS®-2000 Digital Switch, designed to allow high speed, reliable network interconnection.

The Lucent 5ESS-2000 Switch allows service providers such as telephone companies to route data, voice and video signals to communicate information. Switching equipment links telephones plus fax machines, computers, and other data systems together on the public switched telephone network, so people can exchange information no matter where they are located.

Information can be sent in traditional ways with a person's voice speaking on the telephone, with facsimile transmission to send documents, or through data sent via computer systems.

- more -

A digital switch is a single system with multiple applications such as local, toll, operator services. The switch architecture is a modular, distributed architecture with an administrative module, a communications module, and a varying number of switching modules that provide the major processing power in the total communication system.

Wireless Fiber

WinStar's target customers are small to medium size businesses located in buildings not connected to a fiber-optic network. WinStar's Wireless Fiber service can be utilized for rapid, cost-effective, high-capacity linkage to fiber-based networks. WinStar will utilize its Wireless Fiber service to originate and terminate customer traffic without connecting to end users through the extension of fiber-optic lines or using the facilities of the LECs.

WinStar customers also have access to a variety of private network services if they are located in a WinStar building. WinStar offers its Wireless Fiber service to businesses seeking cost-effective, high capacity Internet access and private voice and data network services. The total amount of bandwidth of each 38 GHz channel is 100 MHz, which supports very high broadband capability. One Wireless Fiber DS-3 link provides transfer rates which are over 1,250 times the rate of the fastest dial-up modem currently in use and over 600 times the rate of the fastest ISDN line currently in use. seeking cost-effective, high capacity Internet access and private voice

In addition to accommodating standard voice and data requirements, Wireless Fiber service can allow end users to receive real time, full motion video and 3-D graphics and to utilize highly interactive applications on the Internet and other networks. WinStar offers its Wireless Fiber services to businesses, government agencies, institutions and other carriers to extend the reach of a network wherever it needs additional capacity or for multiple locations that seek to establish their own independent local telecommunications systems for dedicated private line voice and data networks, including LAN and WAN applications.

WinStar Wireless Fiber Capabilities

WinStar utilizes wireless technology to provide digital broadband access services to extend the reach of fiber networks. Through its acquisition of Locate and Milliwave, WinStar will become the most ubiquitous licensed provider of fiber-quality wireless broadband access services in the United States.

WinStar provides the high quality transmission required to extend both voice services and the most demanding data applications and protocols. Wireless Fiber service allows WinStar to bring new customers onto the network faster, without compromising on quality.

WinStar provides its wireless broadband transmission services using a variety of radio technologies, integrating best of class equipment from wireless manufacturers to serve the specific needs of its customers.

The primary technology for broadband access services is WinStar's 38 GHz Wireless Fiber service. The inherent advantages of this band in the spectrum make it ideally suited for local access applications.

WinStar's 38 GHz Wireless Fiber service provides the following advantages:

- High bandwidth capacity (currently supports speeds to DS-3)
- Resilience to atmospheric phenomenon, supported by Automatic Gain Control (AGC) circuitry that ensures high quality service
- Field-proven reliable technology, now in service with major CAPS, BOCs, IXC's, wireless carriers and private networks in the United States, and widely used by European wireless carriers
- Inherently robust technology resilient to flooding, winds, earthquakes, and fiber cuts. An excellent choice both for primary access as well as for alternate path routing and disaster recovery applications
- Distance carrying capability of up to 5 miles depending on location.
- Engineered to 99.999% reliability, and BER of 10-13 for DS1, 10-11 for DS3.
- Small, transceivers are just 1 or 2 feet in diameter; physically and aesthetically unobtrusive.

WinStar Market Penetration

In addition to New York City, WinStar has initiated service in Boston, Chicago, Atlanta, San Diego and Los Angeles and will offer telephone services in 42 U.S. markets in the next three years.

WinStar also is in the process of negotiating interconnection agreements with various local exchange service providers, including incumbent LECs, under which WinStar will obtain services on an unbundled basis. WinStar has entered into a number of interconnection agreements for states that encompass various cities covered by the Wireless Licenses.

These agreements are with carriers such as:

- Ameritech Corp. ("Ameritech") for Illinois
- Pacific Bell ("PacBell") and GTE Telecommunications ("GTE") for California
- NYNEX for New York and Massachusetts
- Bell South for Florida, Georgia and Tennessee

WinStar is currently is authorized to operate as a competitive local exchange carrier (CLEC) in the following states:

California	Michigan
Connecticut	New York
Florida	Tennessee
Georgia	Texas
Illinois	Washington
Massachusetts	Wisconsin

WinStar is in the process of seeking authorization to operate as a CLEC in several additional states.

WinStar currently holds 38 GHz licenses in 42 of the top 45 markets in the United States, covering 110 million people. Upon completion of pending acquisitions, each of which is subject to FCC approval, WinStar will have license coverage in 46 of the top 50 markets, and more than 160 major market areas in total, averaging approximately 170 million people.

WinStar Communications, Inc. is a national local communications company, serving business customers, long distance carriers, fiber-based competitive access providers, mobile communications companies, local telephone companies, and other customers with broadband local communications needs. The company provides its Wireless Fiber services using its licenses in the 38 GHz spectrum. The company also provides long distance services and various information services and entertainment content.

WinStar is a registered trademark and Wireless Fiber is a service mark of WinStar Communications, Inc.

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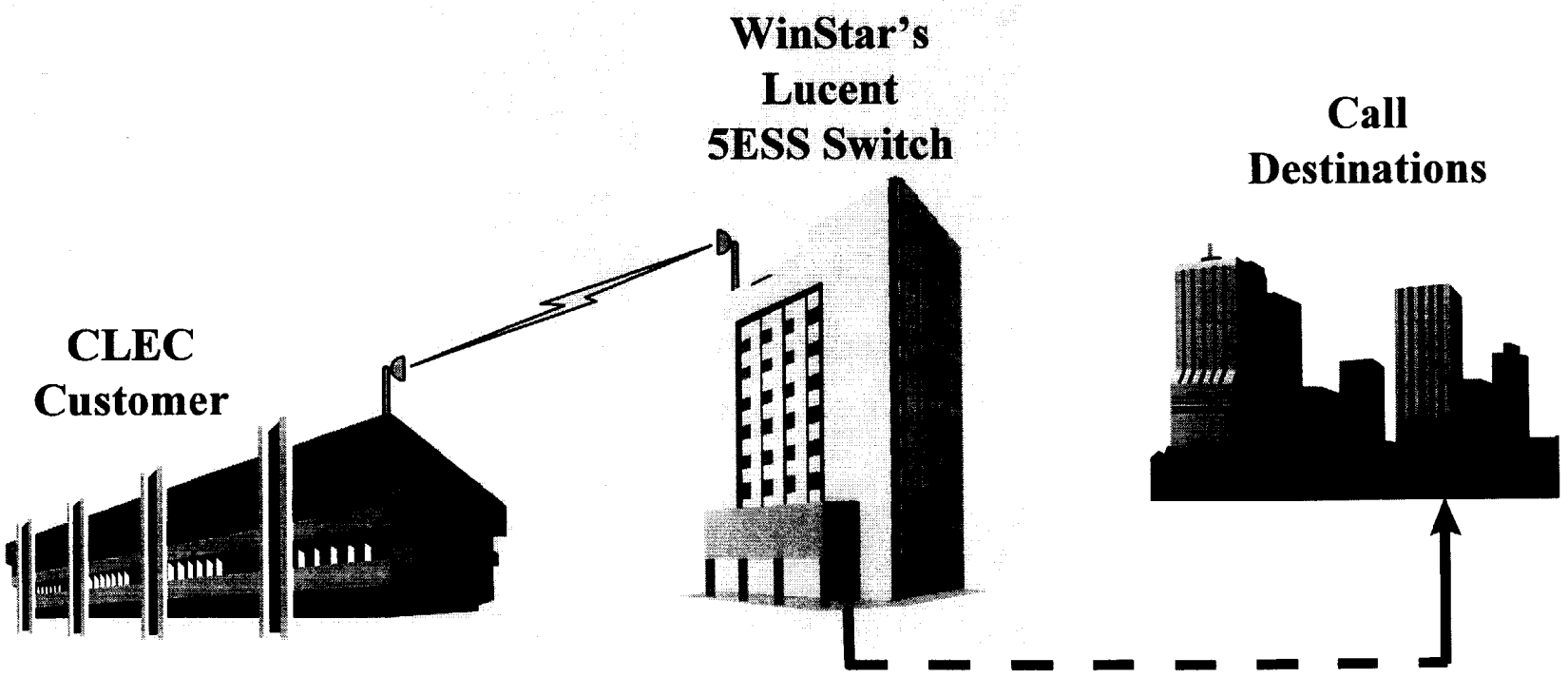
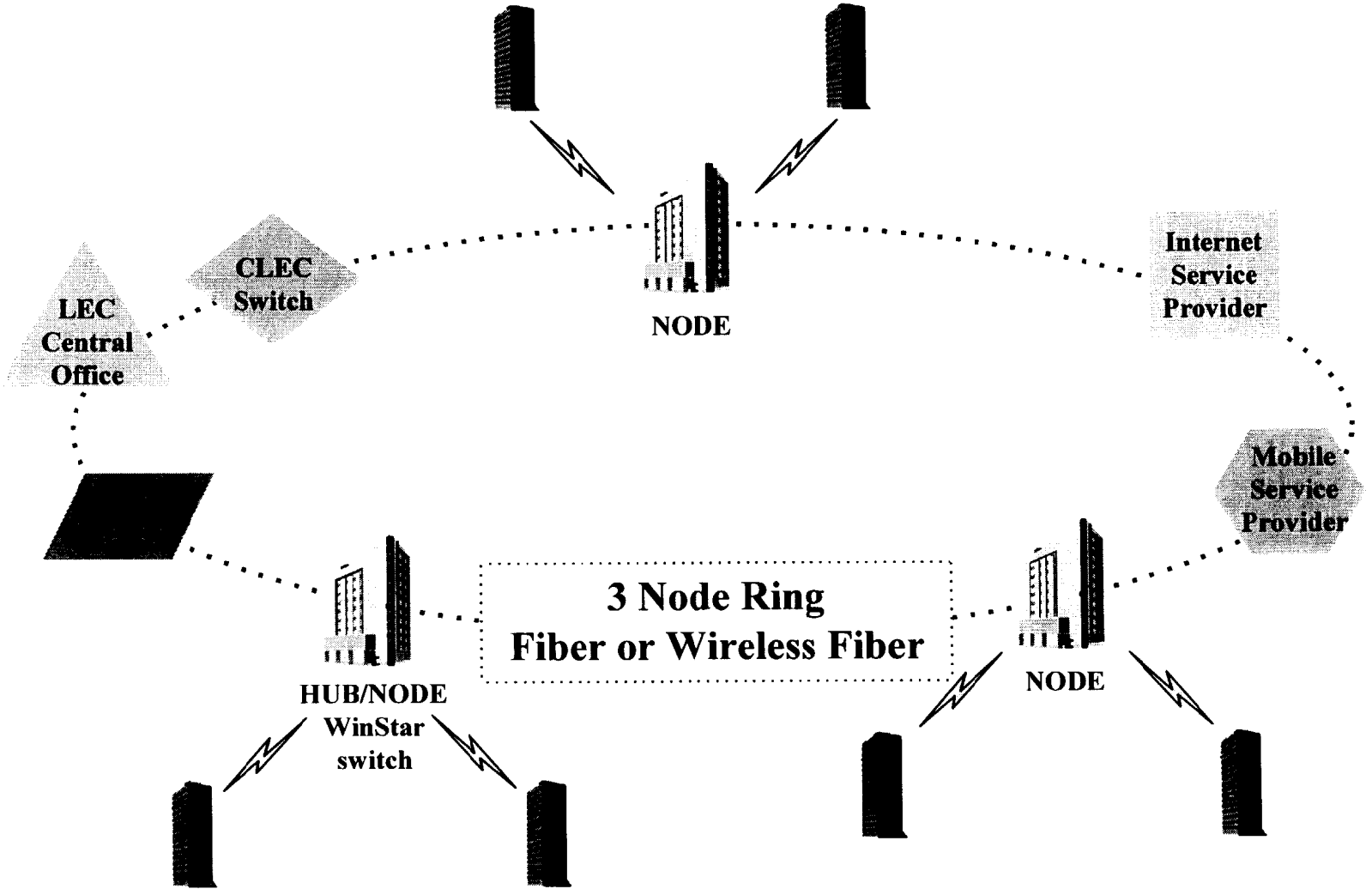
FACILITIES-BASED CLEC STRATEGY

Origination and Switching on WinStar Facilities



WINSTAR COMMUNICATIONS, INC.

WINSTAR CITY ROLLOUT MODEL



WINSTAR COMMUNICATIONS, INC

CITY LAUNCH SCHEDULE

Switch Rollout

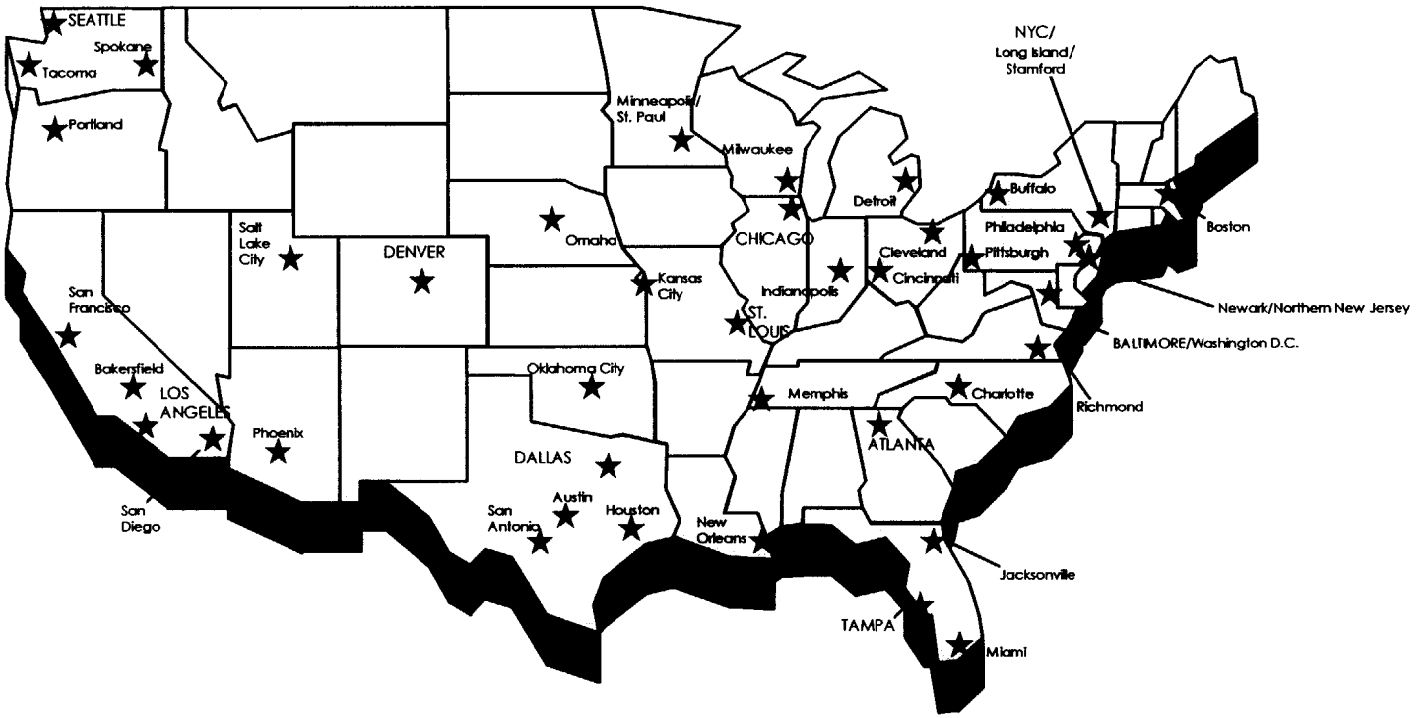
4Q96	Spring 97	Year End 1997	Year End 1998
New York	**Chicago** **Los Angeles** **Boston** **San Diego** **Atlanta**	**16 cities**	**42 cities**

Backlog of orders with expected annual revenues of $5 million after a few months of selling in New York

WINSTAR COMMUNICATIONS, INC.

WINSTAR SWITCH PLAN

41 Planned Switches in Three Years



WINSTAR COMMUNICATIONS, INC.