FRONTIER SOUTHWEST INCORPORATED
d/b/a
FRONTIER COMMUNICATIONS OF TEXAS

TEXAS INTRALATA INTEREXCHANGE SERVICES

PRODUCT GUIDE

TABLE OF CONTENTS

[1] Effective May 31, 2022, Frontier will no longer support Moves, Adds or Changes nor new installations for [ATM] Service. Upon service term expiration, the service will transition to a Month-to-Month service arrangement. (N) (N)

SYMBOLS

The following symbols will be utilized for all changes of material within the IntraLATA Interexchange Services Product Guide.

(I) Increase in Rate

(N) New Rate, Regulation or Text

(R) Reduction in Rate

(C) Change in Regulation

(T) Text Change, but no change in Rate or Regulation

(D) Discontinued Rate, Regulation or Text

(M) Moved Rate, Regulation or Text from one page to another with no change in Rate, Regulation or Text

(E) Correction of an error made during a revision and in connection with material previously contained in the guide

GENERAL RULES AND REGULATIONS

APPLICATION OF PRODUCT GUIDE

This product guide contains rules, regulations, rates, and charges applicable to the provision of intrastate intraLATA (either intraexchange or interexchange) private line service and facilities within its operating territory in the state of Texas (including Texarkana, U.S.A.) by Frontier Southwest Incorporated d/b/a Frontier Communications of Texas hereinafter referred to as the Company. The regulations specified herein are in addition to the regulations contained the General Exchange Product Guide and in other sections of this product guide. Private line services and facilities may be combined with other telephone companies like services to provide a jointly provided service or facility.

Texas Universal Service Fund (TX USF) Charge

The TX USF Charge is for the recovery of the Company's TX USF assessment. The charge is assessed as a percentage applied against the customer's intrastate telecommunications services receipts. All services in this product guide, purchased by retail customers, are subject to the TX USF.

The TX USF Charge will change periodically due to assessment fund and revenue changes. The percentage as of August 1, 2022 is 24%. (T) (I)

The TX USF Charge will be identified on the retail customer's bill as "Texas Universal Service".

The services offered under this product guide are available for resale.

GENERAL RULES AND REGULATIONS

DISTANCE LEARNING AND INTERACTIVE MULTIMEDIA COMMUNICATIONS

Upon submission of an affidavit that complies with the requirements of Public Utility Commission of Texas Substantive Rule 23.93, an educational institution may obtain a 25 percent discount on the rate for any service that used predominantly for distance learning purposes.

DS1 (1.544 Mbps) SERVICE

GENERAL

Digital Signal Level 1 (DS1) Service is a dedicated, high capacity channel that provides end-to-end digital connectivity. The service may be used for simultaneous two-way transmission of serial, bipolar, return-to-zero isochronous digital signals at a transmission speed of 1.544 megabits per second (Mbps). This service is designed to provide an average performance of at least 95 percent error free seconds of transmission over a continuous 24 hour period.

Provision of Service - DS1 Service is available only on a point-to-point intraLATA basis, either for interexchange or intraexchange applications. This service is provided between two customer designated locations, between a serving wire center and a customer designated location or point of connection, or between wire centers.

DS1 Service is furnished on a full-time basis (24 hours a day, seven days per week). DS1 Service can only be provided within the same LATA. Services between serving wire centers must have digital service components (digital connectivity) between all intermediate offices to have the ability to provide the service.

DS1 (1.544 Mbps) SERVICE

ABBREVIATIONS

CDL - Customer Designated Location
DS1 - Digital Signal Level 1
Kbps - Kilobits Per Second
LL - Local Loop
Mbps - Megabits Per Second
OPP - Optional Payment Plan

DEFINITIONS

DS1 (Digital Signal Level 1): The hierarchical term denotes a channel service that allows up to 1.544 Mbps of information to be sent from one point to another over a single transmission path. This service provides for the two-way simultaneous transmission of isochronous timed, Bipolar Return-to-Zero (BPRZ) bit stream format. Unframed signal formats are not permitted or compatible with Company equipment.

Isochronous: Pertains to the timing in the digital transmission of data in which two or more sequential signals have a uniform timing relationship.

DS1 Local Loop: The transmission facilities between a customer designated location (CDL) and the serving wire center.

DS1 Transport: The transmission facilities (e.g., cable, outside plant equipment, repeaters, etc.) used to provide digital transmission between two serving wire centers, between a serving wire center and a Telephone Company-designated digital hub, or between digital hubs.

DS1 Transport Termination: The equipment (e.g., cross-connectors, multiplexers, etc.) and arrangements (i.e., connection of equipment such as cross-connectors and multiplexers) necessary to terminate the Transport facility at a serving wire center.

DS1 (1.544 Mbps) SERVICE

REGULATIONS

A DS1 Local Loop (DS1 LL) provides the transmission facilities between a customer designated location (CDL) and the serving wire center.

There are two levels of nonrecurring charges and monthly rates applicable to the installation and ongoing provisioning of a DS1 LL as set forth in RATES section of this product guide. The "First DS1" monthly rate and nonrecurring charge is assessed per LL for the first DS1 service ordered by a customer between CDLs. When the same customer requests additional DS1s on the same order to be installed at the same time and between the same CDLs as the "First DS1" DS1 LL, the lesser monthly rate and nonrecurring charge under "Additional DS1s" will apply.

DS1 Transport is defined as the facilities for digital transmission provided between two serving wire centers, between a serving wire center and a Telephone Company-designated digital hub, or between digital hubs. The serving wire centers may be located in the same exchange area, as in a multi-office metropolitan exchange, or may be located in different exchange areas. The monthly rate is applied on a per airline mile basis. Fractional miles are rounded up to the next whole mile. Refer to Section 4 of the Frontier Southwest Incorporated Texas Facilities for State Access Tariff concerning mileage calculation methodology.

DS1 Transport Termination provides the equipment and arrangements necessary to terminate the DS1 Transport facility at a serving wire center. One DS1 Transport Termination monthly rate and nonrecurring charge applies for the termination of each Frontier end of a DS1 Transport facility for DS1 Services.

The DS1 Transport Termination monthly rate and nonrecurring charge will not apply if both CDLs are in the same serving wire center.

DS1 (1.544 Mbps) SERVICE

REGULATIONS (Cont'd)

Optional Payment Plan (OPP)

A customer may elect to participate in an Optional Payment Plan (OPP) arrangement for DS1 Service. The OPP allows a customer to order the "First DS1" DS1 Local Loop (DS1 LL) over a 12 month, 36 month, or 60 month payment period. The OPP applies to the "First DS1" DS1 LL rate element ordered between a customer designated location and its serving wire center or hub wire center. The same customer may order "Additional DS1" DS1 LLs between the same customer designated location and its serving wire center at any time.

Termination Liability

1. See General Rules and Regulations, Section 5, in the General Exchange Product Guide. The following paragraph replaces paragraph 2 of the Termination Liability language in the General Rules and Regulations, Section 5, in the General Exchange Product Guide for purposes of this section.

2. Early termination charges will apply only to those rate elements under a term commitment period. If any rates for the service are increased in excess of ten percent (10%) during the term period, exclusive of any increase due to local, state or federal fees, taxes or surcharges, the customer may terminate the service without incurring an early termination charge.

Notification of Discontinuance

Notice of discontinuance must be given by the customer at least thirty (30) days prior to actual discontinuance. Monthly rates will apply for a period of thirty (30) days from the date the Telephone Company receives discontinuance notification or until the requested discontinuance date, whichever period is longer.

DS1 (1.544 Mbps) SERVICE

REGULATIONS (Cont'd)

Clear Channel Capability

An optional arrangement that allows the customer to transport 1.536 Mbps of information through a DS1 with no constraint on the quantity or sequence of one (mark) and zero (space) bits utilizing the Bipolar with Eight Zero Substitution (B8ZS) method of providing bit sequence independence. This arrangement is capable of transporting DS1 signals which utilize Superframe or Extended Superframe Format (ESF) as defined by the American National Standards Institute (ANSI) T1.107.1988 standard. The installation interval for Clear Channel Capability may exceed standard intervals where equipment in the central office is not readily available.

This arrangement requires the customer signal at the channel interface to conform to the B8ZS method of providing bit sequence independence.

DS1 (1.544 Mbps) SERVICE

RATES AND CHARGES

		Nonrecurring Charge	Monthly Rate	
a.	DS1 Local Loop (DS1 LL)			
	- First DS1			
	Month/Month	$800.00	$1,338.79	(I)
	Public Service [2]	-0-	$291.30	
	12 Month Term Commitment	-0-	$1,271.40	(I)
	36 Month Term Commitment	-0-	$519.49	
	60 Month Term Commitment	-0-	$1,015.29	(I)
	- Additional DS1 (Ea.) (Available with all First DS1 offerings)	150.00	$651.39	(I)
	Public Service [2]	-0-	642.40	(I)
b.	DS1 Transport			
	Per Airline Mile	-0-	$71.82	(I)
	Public Service [2]	-0-	-0-	
c.	DS1 Transport Termination			
	Per Termination	-0-	$179.67	(I)
	Public Service Per Termination [2]	-0-	$34.27	
d.	Services Charges	[1]		
e.	Clear Channel Capability			
	Per SAL	90.00	$27.60	
	Public Service, Per SAL	67.50	$45.66	(I)
f.	DS1 for Public Service Jointly Provided with Southwestern Bell with meet-point circuits provisioned for end-to-end service (Southwestern Bell rates are included):			
	Without Clear Channel Capability	-0-	$474.84	
	With Clear Channel Capability	-0-	$521.41	

[1] Service ordering charges as set forth in the Texas General Exchange Product Guide will apply for the ordering and processing of a customer's request for initial service and subsequent changes.

[2] See Texas General Exchange Product Guide for customers qualifying for Public Service rates.

FRACTIONAL T1

GENERAL

Fractional T1 (FT1) Service provides a DS1 interface for use in providing simultaneous two-way transmission of isochronous bipolar serial data signals in groupings of 2, 4, or 6 channels of 56 or 64 Kilobits per second (Kbps). FT1 service at a rate of 64 Kbps will only be provided where clear channel capability is available in the network. FT1 channels are contiguous within the network and can be used to create a wideband circuit using customer provided equipment.

DEFINITIONS

Binary

Relating to a numbering system that has two values or states possible for a particular condition.

Bipolar

A method of transmission of digital services. The signal carrying the binary value alternates between positive and negative.

DS1 (Digital Signal Level 1)

The hierarchical term denotes a channel service that allows up to 1.544 Megabits per second (Mbps) of information to be sent from one point to another over a single transmission path. This service provides for the two-way simultaneous transmission of isochronous timed, Bipolar Return-to-Zero (BPRZ) bit stream format. Unframed signal formats are not permitted or compatible with Company equipment.

Isochronous

Pertains to the timing in the digital transmission of data in which two or more sequential signals have a uniform timing relationship.

REGULATIONS

Shared use of Fractional T1 and FiberConnect is not available.

Fractional T1 Local Loop

A Fractional T1 Local Loop provides the transmission facilities between a customer designated location (CDL) and the serving wire center.

FRACTIONAL T1

REGULATIONS (Cont'd)

Fractional T1 Transport

Fractional T1 (FT1) Transport provides for transmission facilities between two serving wire centers, between a serving wire center and a Telephone Company designated digital hub, or between digital hubs. The serving wire centers may be located in the same exchange area, as in a multi-office metropolitan exchange, or may be located in different exchange areas. The monthly rate is applied per airline mile. Fractional miles are rounded up to the next whole mile. The airline mileage is determined using the V & H method as set forth in the National Exchange Carrier Association (NECA) Tariff FCC No. 4.

Fractional T1 Transport must be ordered in the same grouping as the associated FT1 Local Loop.

Fractional T1 Transport Termination

Fractional T1 Transport Termination provides the equipment and arrangements necessary to terminate the FT1 Transport facility at a serving wire center. One FT1 Transport Termination charge applies for each end of a FT1 Transport facility.

FT1 Transport Termination must be ordered in the same grouping as the associated FT1 Local Loop.

Optional Payment Plan

The customer may elect to participate in an Optional Payment Plan (OPP) arrangement for Fractional T1 (FT1) service. The OPP allows the customer to order FT1 service over a 12 month, 36 month, or 60 month payment period. Only the FT1 Local Loop rate element is available under an OPP. All other associated rate elements are available at the standard month-to-month rates.

A customer may change from DS1 OPP service to an FT1 OPP service subject to the following rate applications. Also, a customer may change the number of channels of a 56 Kbps or 64 Kbps service to another higher value (2, 4 or 6), subject to the following rate applications:

- The changed service will be subject to all appropriate nonrecurring charges.

- Termination liability charges will not apply as long as the changed service remains connected at the same point of termination.

Changes in Length of OPP Period

Prior to the completion of the selected OPP period, the customer may elect to convert to a new OPP period of the same or different length, subject to the following conditions:

- No credit toward the new payment period will be given for payments made under the original OPP arrangement.

FRACTIONAL T1

REGULATIONS (Cont'd)

Optional Payment Plan (Cont'd)

- Nonrecurring charges will not be reapplied for existing service.

- If the new OPP period is shorter in length than the time remaining under the existing OPP, the change to the new OPP period constitutes a disconnect of the existing OPP service and termination liability charges apply.

Renewal Options

Conversion to a different OPP period will be allowed without application of any nonrecurring or service ordering charges.

Conversion to month-to-month rates will be treated as a disconnect of service and establishment of new service. If no other changes are ordered, only the Primary Service Order Charge as found in Section 13 of the Texas General Exchange Product Guide will apply.

Termination Liability

(See General Rules and Regulations in the General Exchange Product Guide.)

FRACTIONAL T1

RATES AND CHARGES

Fractional T1 Local Loop

	Nonrecurring Charge (1)	Monthly Rate
Month-to-Month		
2 x 56/64 Kbps	$400.00	$103.78
4 x 56/64 Kbps	400.00	111.59
6 x 56/64 Kbps	400.00	119.39
12-Month Term Commitment		
2 x 56/64 Kbps	-0-	100.00
4 x 56/64 Kbps	-0-	110.00
6 x 56/64 Kbps	-0-	119.00
36-Month Term Commitment		
2 x 56/64 Kbps	-0-	90.00
4 x 56/64 Kbps	-0-	99.00
6 x 56/64 Kbps	-0-	107.10
60-Month Term Commitment		
2 x 56/64 Kbps	-0-	80.00
4 x 56/64 Kbps	-0-	88.00
6 x 56/64 Kbps	-0-	95.20

(1) In addition to the appropriate Service Order Charge in the Texas General Exchange Service Product Guide.

FRACTIONAL T1

RATES AND CHARGES (Cont'd)

	Nonrecurring Charge	Monthly Rate
Fractional T1 Transport per airline mile		
2 x 56/64 Kbps	-0-	$5.50
4 x 56/64 Kbps	-0-	6.50
6 x 56/64 Kbps	-0-	7.50
Fractional T1 Transport Termination per termination		
2 x 56/64 Kbps	-0-	12.00
4 x 56/64 Kbps	-0-	18.00
6 x 56/64 Kbps	-0-	24.00

FIBERCONNECT

GENERAL

FiberConnect provides a High Capacity Digital interface for use in providing simultaneous two-way transmission of an isochronous bipolar serial data stream at a rate of 6.312 Megabits per second (Mbps), encoded and converted to a signal suitable for optical transport. FiberConnect service is transmitted on fiber optic cable. When FiberConnect is provided with a fiber optic interface at the Customer Designated Location (CDL), a single transmission channel is provided with a data rate dependent on the Telephone Company fiber optic terminal equipment used to provision the facility. When FiberConnect is provided with an electrical interface, four transmission channels of 1.544 Mbps each are provided at the interface.

Fiber Optic Interface denotes the termination of service with single mode fiber optic cable at the customer premises. When this interface is selected, it is the customer's responsibility to provide the optical line termination at the customer's premises. This equipment must be compatible with the Telephone Company provided equipment.

FiberConnect is offered only on a protected basis between a CDL and its serving wire center. FiberConnect is not available with multipoint services.

DEFINITIONS

Binary

Relating to a numbering system that has two values or states possible for a particular condition.

Bipolar

A method of transmission of digital services. The signal carrying the binary value alternates between positive and negative.

DS1

The hierarchical term denotes a channel service that allows up to 1.544 Mbps of information to be sent from one point to another over a single transmission path. This service provides for the two-way simultaneous transmission of isochronous timed, Bipolar Return-to-Zero (BPRZ) bit stream format. Unframed signal formats are not permitted or compatible with Company equipment.

FIBERCONNECT

DEFINITIONS (Cont'd)

Isochronous

Pertains to the timing in the digital transmission of data in which two or more sequential signals have a uniform timing relationship.

FiberConnect Local Loop

The transmission facilities between a customer designated location (CDL) and the serving wire center.

REGULATIONS

The Telephone Company, at the option of the customer, will provide either an electrical or a fiber optic interface. The electrical interface option provides four electrical channels at 1.544 Mbps each. The fiber optic interface option is provided on a single mode fiber and terminates on fiber optic connectors. The 6.312 Mbps signal will be made up of four transmission channels of 1.544 Mbps each and will be encoded to an optical data rate dependent on the fiber optic terminal equipment used by the Telephone Company to provision the facility. When the optical interface is selected, it is the customer's responsibility to provide the optical line termination at his premises. This equipment must be compatible with the equipment provided by the Telephone Company. Service will be provided on a one for one protected basis only.

Shared use of FiberConnect and Fractional T1 is not available.

Rates for the FiberConnect Local Loop vary by optical or electrical interface selected. Transport between serving wire centers for FiberConnect is ordered as 1, 2, 3 or 4 DS1s. Transport and Transport Termination rates are as shown in Section 4 of this product guide.

Optional Payment Plan

This service may be ordered month-to-month or the Optional Payment Plan (OPP). The OPP allows the customer to order FiberConnect service over a 12 month, 36 month, or 60 month payment period.

FIBERCONNECT

REGULATIONS (Cont'd)

Optional Payment Plan (Cont'd)

Changes in Length of OPP Period

Prior to the completion of the selected OPP period, the customer may elect to convert to a new OPP period of the same or different length, subject to the following conditions:

- No credit toward the new payment period will be given for payments made under the original OPP arrangement.

- Nonrecurring charges will not be reapplied for existing service.

- If the new OPP period is shorter in length than the time remaining under the existing OPP, the change to the new OPP period constitutes a disconnect of the existing OPP service and termination liability charges apply.

Renewal Options

At the expiration of an OPP period, the Telephone Company will automatically renew the service at the same OPP period unless the customer chooses to convert to a different OPP period or discontinue service.

Conversion to a different OPP period will be allowed without application of any nonrecurring or service ordering charges.

Termination Liability

(See General Rules and Regulations in the General Exchange Product Guide.)

FIBERCONNECT

RATES AND CHARGES

	Nonrecurring Charge (1)	Monthly Rate
FiberConnect Local Loop- Electrical Interface		
Month/Month	$3,500.00	$1,200.00
12 Month	1,000.00	1,125.00
36 Month	1,000.00	800.00
60 Month	1,000.00	700.00
FiberConnect Local Loop- Optical Interface		
Month/Month	3,500.00	1,050.00
12 Month	1,000.00	900.00
36 Month	1,000.00	600.00
60 Month	1,000.00	525.00
FiberConnect Transport Per Airline Mile	-0-	(2)
FiberConnect Termination Per Termination	-0-	(2)

(1) In addition to the appropriate Service Order Charge in the Texas General Exchange Service Product Guide.
(2) Rates as shown in Section 4 of this product guide.

DIGITAL DATA SERVICE

GENERAL

Digital Data Service (DDS) is a dedicated, point-to-point channel that provides end-to-end digital connectivity. The service supports synchronous, full-duplex digital transmission between customer designated locations and the serving wire center or the point of connection with another telephone company. The synchronous speeds offered through Digital Data Service have bit rates of 2.4, 4.8, 9.6, 19.2, and 56 kilobits per second (Kbps).

2.4 Kbps: These circuits are used for single terminal configurations.

4.8 Kbps: These circuits are used for single terminal configurations.

9.6 Kbps: These circuits can be used for single terminal configurations and multiple terminal configurations through the addition of customer-provided multiplexers.

19.2 Kbps: These circuits can be used for single terminal configurations as well as multiple terminal configurations through the addition of customer-provided multiplexers.

56 Kbps: These circuits are suitable for all the data transmission configurations described above. They require the ability to connect to a synchronous network. These circuits may be ordered as two-port or in multiport configurations. However, multiport configurations are rare due to the considerable bandwidth of the circuit but are available. Customer-provided multiplexing of the lower speed synchronous or asynchronous circuits between two customer designated locations is common at this speed.

Provision of Service - Digital Data Service provides a transmission path for digital data signals between two customer designated locations within a LATA. Digital Data Service provides full-duplex operation on a full-time basis (24 hours a day, seven days per week).

Digital Data Service can only be provided within the same LATA (i.e., interexchange or intraexchange applications).

DIGITAL DATA SERVICE

ABBREVIATIONS

CDL - Customer Designated Location
DS1 - Digital Signal Level 1
DDS - Digital Data Service
Kbps - Kilobits Per Second
LL - Local Loop

DEFINITIONS

Asynchronous: A method of transmitting data in which each character is preceded by a start bit and followed by a stop bit, thus permitting the interval between characters to vary.

Digital Data Service: A dedicated point-to-point channel that provides end-to-end digital connectivity. The service supports synchronous, full-duplex digital transmission between customer designated locations and the serving wire center or the point of connection with another telephone company. The synchronous speeds offered through Digital Data Service have bit rates of 2.4, 4.8, 9.6, 19.2, and 56 kilobits per second (Kbps).

DDS Local Loop: The transmission facilities between a customer designated location (CDL) and the serving wire center are defined as a DDS Local Loop.

DDS Transport: The transmission facilities (e.g., cable, outside plant equipment, repeaters, etc.) used to provide digital transmission between two serving wire centers.

DDS Transport Termination: The equipment (e.g., cross-connectors, multiplexers, etc.) and arrangements (i.e., connection of equipment such as cross-connectors and multiplexers) necessary to terminate the DDS Transport facility at a serving wire center.

Serving Wire Center: The central office from which service is provided to the customer.

Synchronous: A method of transmitting data in which the data characters (bits) are transmitted in a continuous stream with the beginning of one data character (bit) being contiguous with the end of the preceding data character.

DIGITAL DATA SERVICE

REGULATIONS

A DDS Local Loop (DDS LL) provides the transmission facilities to a customer designated location (CDL) or the facilities between a CDL and the serving wire center. This rate element varies by the bit-rate of the circuit ordered. The applicable rates are the nonrecurring charge and monthly rate set forth per DDS LL installed.

One DDS LL monthly rate and nonrecurring charge applies per CDL at which the facility is terminated. The rate and charge apply even if the facilities to the CDL do not transit a serving wire center. The rate and charge also apply even if the CDL and the serving wire center are collocated in a Telephone Company building, except as specified below.

When the CDL and the serving wire center are collocated and the circuit is cross connected with other Telephone Company provided services (e.g., DS1 Multiplexing, etc.), only one DDS LL monthly rate and nonrecurring charge apply.

DDS Transport provides the transmission facilities between the serving wire centers associated with two CDLs. The monthly rate is applied on a per airline mile basis. Fractional miles are rounded up to the next whole mile. Refer to Section 4 of the Frontier Southwest Incorporated Texas Facilities for State Access Tariff concerning mileage calculation methodology.

DDS Transport Termination provides the equipment and arrangements necessary to terminate the DDS Transport facility at a Telephone Company serving wire center. One DDS Transport Termination monthly rate and nonrecurring charge applies for the termination of each Frontier end of a DDS Transport facility for Digital Data Services.

The DDS Transport Termination monthly rate and nonrecurring charge will not apply if both CDLs are in the same serving wire center.

DDS is offered in a two-point configuration connecting two CDLs.

DIGITAL DATA SERVICE

RATES AND CHARGES

1. DDS Local Loop (DDS LL)

	Nonrecurring Charge	Monthly Rate	
2.4 Kbps	$250.00	$253.53	
4.8 Kbps	$250.00	$253.53	
9.6 Kbps	$250.00	$253.53	
19.2 Kbps	$250.00	$253.53	
56 Kbps	$250.00	$624.86	(I)

b. DDS Transport
Per Airline Mile:

2.4 Kbps	-0-	$10.49	(I)
4.8 Kbps	-0-	$10.49	
9.6 Kbps	-0-	$10.49	
19.2 Kbps	-0-	$10.49	
56 Kbps	-0-	$20.98	(I)

c. DDS Transport Termination

Per Termination (All Speeds)	-0-	$131.48	(I)

d. Service Charges (1)

(1) Service ordering charges as set forth in the Texas General Exchange Product Guide will apply for the ordering and processing of a customer's request for initial service and subsequent changes.

BASET ETHERNET DIGITAL CONNECT SWITCH SERVICE

DESCRIPTION OF SERVICE

BaseT Ethernet Digital Connect Switch is a high-speed, connectionless, packet-switched data service, that transports communications on an intraLATA basis between BaseT Ethernet Digital Connect Switch end users via switched network facilities using common end-to-end protocols. BaseT Ethernet Digital Connect Switch service is limited to the Dallas LATA 552 for the provisioning of interexchange and intraexchange service.

BaseT Ethernet Digital Connect Switch requires a 1.544 Mbps, 45 Mbps, or 56 Kbps digital connection between the customer's premises and the Telephone Company's BaseT Ethernet Digital Connect Switch switching office, utilizing the Switched Multi-Megabit Data Service (SMDS) Interface protocol (SIP).

SMDS Connections

Access Class	Connection	Information Transfer Rate
	DS0	56 Kbps
	DS1	1.17 Mbps
1	DS3	4 Mbs
2	DS3	10 Mbps
3	DS3	16 Mbps
4	DS3	25 Mbps
5	DS3	34 Mbps

Access classes are defined by Bellcore TR-TSV-000772.

BaseT Ethernet Digital Connect Switch will allow customers who currently require high-speed, inter-premises connectivity to interconnect their multiple premises, within the LATA, via the SMDS Connections.

Each SMDS Connection, except the DSO, has up to 16 unique Subscriber Network Interface (SNI) address assignments. The DSO connection has only one SNI address assignment. The SNI address is a ten-digit number, following a prefix of "1", structured according to the International Telegraph and Telephone Consultive Committee (CCITT) Recommendation E.164 format and the North American Numbering Plan (NANP).

Each customer may limit access to their SMDS Connection ports by establishing a "Screening Table". A Screening Table limits access to a SMDS connection port by identifying all calling SNI addresses and matching each SNI address to a screening list of SNI addresses with access privileges.

BASET ETHERNET DIGITAL CONNECT SWITCH SERVICE

Regulations

Application of Rates

The following regulations are in addition to other regulations established in this product guide.

BaseT Ethernet Digital Connect Switch service is comprised of the following rate elements:

SMDS Access
Subsequent Activity Charge
Group Address Creation

The Switched Multi-Megabit Data Service (SMDS) Access purchased from this product guide connects the customer premises to the appropriate BaseT Ethernet Digital Connect Switch switching office.

For customers requring a 1.544 Mbps digital connection, digital high capacity special access line (1.544 Mbps) charges will apply from the customer's premises to the customer's serving office at the rates shown in Section 4 of this product guide. The regulations, rates and charges for the 1.544 Mbps special access line facilities will apply in addition to the rates and charges associated with the SMDS service. The maximum effective data transmission rate of this connection is 1.17 Mbps.

Customers requiring a 45 Mbps or 56 Kbps digital connection will be charged at the rates shown on Sheet No. 6 of this product guide.

The Subsequent Activity Charge, per Subscriber Network Interface (SNI) affected, will apply for changes or additions to SNIs and/or Screening Tables after service is established.

The Subscriber Network Interface (SNI) is an address for transmitting communication to and from a customer's Switched Multi-Megabit Data Service (SMDS) Connection port. There can be up to 16 SNIs per SMDS Connection port with the exception of the DSO connection which has only one SNI. SNIs can be requested with initial installation. When ordered after the initial installation, the Subsequent Activity charge will apply.

Each SMDS Connection is assigned a SNI. Each SNI is associated with a Screening Table. Screening Tables can provide a list of SNIs who can access other SNIs. A customer can thereby restrict access to their SMDS Connection port. Group Address Creation may be required with some customer applications, due to customer provided equipment limitations and/or protocols. When required, the customer will be charged the monthly and nonrecurring charges as set forth on Sheet No. 6.

Customer Network Management (CNM) service provides BaseT Ethernet Digital Connect Switch customers access into the Telephone Company's BaseT Ethernet Digital Connect Switch management system. The customer is required to have a Simple Network Management Protocol (SNMP) based management system. The CNM system allows customers to view the status of their BaseT Ethernet Digital Connect Switch access interfaces and obtain information on their link facilities.

BASET ETHERNET DIGITAL CONNECT SWITCH SERVICE

Regulations (Continued)

Application of Rates (Continued)

The Group Address Creation monthly rate applies for each group addressing list established. A nonrecurring charge applies for the establishment of and for changes to the group addressing list of SNIs.

The Primary Service Order as specified in the Texas General Exchange Product Guide will apply per service order for the establishment of a SMDS Connection.

The Secondary Ordering Charge as specified in the Texas General Exchange Product Guide will apply per subsequent service order and is in addition to (1) the Subsequent Activity Charge, per SNI affected, and (2) the Group Address Creation charge, per list.

Moves

When a customer requests a move or relocation of the SMDS Connection, the move or relocation will be treated as a termination of existing service and the establishment of a new service for the application of all charges.

Cancellation or Change of Application for Service

When an application for service is canceled or changed in whole or in part, the following conditions apply:

After completion of the installation, but prior to the establishment of service, the customer is required to pay the nonrecurring charges(s) and minimum period charges that would apply if the service had been established.

Prior to completion of the installation, the customer will be required to pay the cost incurred by the Telephone Company but not to exceed the amount that would have been charged for the basic service.

BASET ETHERNET DIGITAL CONNECT SWITCH SERVICE

Regulations (Continued)

Responsibility of the Telephone Company

The Telephone Company is only responsible for maintaining and repairing the facilities which it furnishes. The customer may not rearrange, disconnect, remove or attempt to repair any network facilities installed by the Telephone Company.

The Telephone Company's responsibility will be limited to the furnishing of data communications facilities suitable for the Switched Multi-Megabit Data Service (SMDS) Connection. The Telephone Company is not responsible for the installation, operation or maintenance of any equipment provided by the customer.

The Telephone Company reserves the right to inhibit BaseT Ethernet Digital Connect Switch service to maintain the SMDS equipment. Maintenance will be performed during hours that will minimize the impact of disruption to the customer. In addition, negotiated unscheduled or emergency situations may necessitate additional interruption time.

Responsibility of the Customer

The customer is responsible for the provision and maintenance of all customer provided equipment (CPE) and to ensure that the operating characteristics of the CPE is compatible with and does not interfere with the service offered by the Telephone Company.

The customer shall provide compatible equipment (e.g., routers, Data Service Units, Channel Service Units, etc.) in accordance with the interface specifications as described in Bellcore's Publication TR-TSY-000772 and TR-TSY-000773 and verified by the customer with the Telephone Company for each specific equipment implementation.

It is the customer's responsibility to provision the inside wire from the network interface to the SMDS-compatible CPE.

BASET ETHERNET DIGITAL CONNECT SWITCH SERVICE

Regulations (Continued)

Limitations/Availability

BaseT Ethernet Digital Connect Switch will only be offered within LATA 552.

BaseT Ethernet Digital Connect Switch is only available under this product guide on an intraLATA basis. The features of the service may vary by customer demand for data transfer speed.

BaseT Ethernet Digital Connect Switch is available 24 hours a day seven days a week.

The minimum billing period for which service is provided is one month.

The customer must provide information regarding the intended use of the service sufficient to permit the Telephone Company to furnish and maintain the service ordered and to assure that regulations are followed.

The Telephone Company will not provide customer-requested temporary disconnections or temporary suspensions of BaseT Ethernet Digital Connect Switch services.

BASET ETHERNET DIGITAL CONNECT SWITCH SERVICE

RATES

The following rates and charges apply per BaseT Ethernet Digital Connect Switch Service for access into the SMDS Network.

SMDS Connections	Monthly Rates	Nonrecurring Charge (1)
SMDS Access (DS0-56 Kbps), per port	$105.00	$ 95.00
SMDS Access (DS1-1.17 Mbps), per port	400.00	25.00
SMDS Access Class 1 (DS3 - 4 Mbps), per port	2000.00	1000.00
SMDS Access Class 2 (DS3 - 10 Mbps), per port	2200.00	1000.00
SMDS Access Class 3 (DS3 - 16 Mbps), per port	2400.00	1000.00
SMDS Access Class 4 (DS3 - 25 Mbps), per port	2600.00	1000.00
SMDS Access Class 5 (DS3 - 34 Mbps), per port	2800.00	1000.00
Subsequent Activity Charge per SNI affected on existing service		25.00
Optional Feature		
Group Address Creation, per list	25.00	25.00
Customer Network Management (CNM)	19.00	40.00

(1) In addition to the appropriate Service Ordering Charges in Section 13 of the General Exchange Product Guide.

CUSTOMER SPECIFIC CONTRACTS FOR HIGH SPEED PRIVATE LINE SERVICES

APPLICATION

This product guide contains regulations and charges applicable to the provision of Customer Specific Contracts for High Speed Private Line Services of 1.544 megabits (Mbps) per second or greater. The regulations specified herein are in addition to the regulations contained in other sections of this product guide.

The services contained in this product guide are installed for the specifically named customers and are not applicable for nonspecific customers.

CUSTOMER SPECIFIC CONTRACTS FOR HIGH SPEED PRIVATE LINE SERVICES

CUSTOMER

Texas Instruments - Lewisville, Plano, Sherman

TYPE SERVICE

IntraLATA/interexchange private network capable of supporting high speed digital services.

TERM COMMITMENT PERIOD - 60 months

	Nonrecurring Rate	Monthly Rate
Transport Network		
Establishment	$450,000	-
Base Line Service Rate		$14,900
Fiber Optic/SONET Transport System		
Access Nodes		
Lewisville		5,613
Spring Creek		5,613
Sherman		5,613

	Monthly Rate
Optional Services (Term Commitment Period - 12 Months)	
OC-3 UNI/NNI -	
155 Mbps User to Network Interface or Network to Network Interface	$3,667.00
FDDI -	
Fiber Distributed Data Interface operating at 100 Mbps	2,697.00
DS3 ATM UNI/NNI -	
45 Mbps User to Network Interface or Network to Network Interface	1,288.00
ETHERNET -	
10 Mbps LAN protocol	359.00
DS-1 Emulation -	
1.554 Mbps circuit emulation	174.00
DS-3 Emulation -	
45 Mbps curcuit emulation	1,331.00

CUSTOMER SPECIFIC CONTRACTS FOR HIGH SPEED PRIVATE LINE SERVICES

CUSTOMER

Texas Instruments (Cont'd)

Definitions

Asynchronous Transfer Mode (ATM) [1] – A very high speed, cell-switched technology based on a fixed-length, 53-byte cell. ATM combines the high bandwidth and low delay of circuit switching with the multiplexing efficiency of packet-switching. (C)

Ethernet – A local area network based on IEEE Standard 802.3 that uses twisted copper wire and operates at 10 Mbps.

Fiber Distributed Data Interface (FDDI) – A local area network based on ANSI Standard X3T9 that uses dual, contra-rotating optical fiber rings that transmit data at 100 Mbps.

Local Area Network (LAN) – A short distance data communications network, typically within a building or campus, used to link together computers and peripheral devices under some form of standard control.

Optical Carrier-3 (OC-3) – A digital transmission service that uses optical fiber and operates at 155 Mbps. OC-3 is roughly equivalent to three DS3s of 45 Mbps each or 2,016 voice-grade equivalent (DS0) channels of 64 Kbps each.

Synchronous Optical Network (SONET) – An optical interface standard governing transmission rates from 51.84 Mbps (OC-1) to 2.5 Gbps (OC-48).

Token Ring – A ring-type local area network based on IEEE Standard 802.5 in which a token must be received by an attached device before that device can transmit data. It uses coaxial cable and operates at 4 Mbps or 16 Mbps.

User-to-Network Interface (UNI) – The physical and electrical demarcation point between a user and a public switched network service provider.

[1] Effective May 31, 2022, Frontier will no longer support Moves, Adds or Changes nor new installations for [ATM] Service. Upon service term expiration, the service will transition to a Month-to-Month service arrangement. (N) (N)

METRO ETHERNET SERVICE

APPLICATION

This section contains definitions, regulations and charges applicable to the provision of Metro Ethernet Service furnished by the Company within the State of Texas where conditions and facilities permit.

DEFINITIONS

Customer Designated Location (CDL) - A location specified by the customer for the purpose of terminating network or switched access services.

DS-1 - A channel service expressed in terms of its digitally encoded bit rate in accordance with the North American hierarchy of digital signal levels. It has a 1.544 Mbps transmission bit rate and provides for the two-way simultaneous transmission of isochronous timed, Bipolar Return-to-Zero (BPRZ) bit stream format. Unframed signal formats are not permitted or compatible with Telephone Company equipment

DS-3 - A channel service expressed in terms of its digitally encoded bit rate in accordance with the North American hierarchy of digital signal levels. It has a 44.736 Mbps transmission bit rate and provides for the two-way simultaneous transmission of isochronous timed, Bipolar Return-to-Zero (BPRZ) bit stream format.

Metro Ethernet - A group of designated Company central offices connected by fiber optic facilities.

Metro Ethernet DS-1 Service - The termination and transport of a DS-1 at and between two or more CDLs, where the serving wire centers (SWCs) of the respective CDLs to be interconnected are located on and interconnected by one or more Metro Ethernets.

Metro Ethernet DS-1 Service is only provided with DS-1 channel facilities derived from a DS-3 channel provided over fiber optic facilities and with fiber multiplexing equipment. Metro Ethernet DS-1 Service may only terminate at those locations where the DS-3 from which it is derived terminates.

Metro Ethernet DS-3 Service - The termination and transport of a DS-3 at and between two or more CDLs, where the SWC(s) of the respective CDLs to be interconnected are located on and interconnected by one or more Metro Ethernets. The link between the CDL and the SWC of the CDL may only consist of fiber optic facilities.

METRO ETHERNET SERVICE

DEFINITIONS (Continued)

Metro Ethernet Service - A LAN to LAN transport service for interconnecting IEEE 802.3 LANs with data rates up to 10 Mbps and data transmission at native speed and native protocol. This service is distance limited to a -31 db system loss. Metro Ethernet Service can be a point-to-point or a multipoint service with up to eight nodes. The SWCs of the LANs to be interconnected must be located on and interconnected by one or more Metro Ethernets. The interoffice transport on the Metro Ethernet is flat rated, non-distance sensitive, and is provided at a 10 Mbps level. The link between the CDL and the SWC of the CDL may only consist of fiber optic facilities.

Metro Ethernet Token Ring Service - A LAN to LAN transport service for interconnecting IEEE 802.5 LANs with data rates of 4 Mbps or 16 Mbps and data transmission at native speeds and native protocol. This service is distance limited to a -31 db system loss. Metro Ethernet Token Ring Service can be a point-to-point or a multi-point service with up to eight nodes. The SWCs of the LANs to be interconnected must be located on and interconnected by one or more Metro Ethernets. The interoffice transport on the Metro Ethernet is flat rated, non distance sensitive, and is provided at a 16 Mbps level. The link between the CDL and the SWC of the CDL may only consist of fiber optic facilities.

Network Interface - The point of electrical interconnection at the CDL between the Company's network communications facilities and the customer's terminal equipment.

Network Node - The Company provided electronic equipment that converts the electrical signal delivered at the Network Interface to an optical signal.

OC-3 - A SONET optical carrier channel facility. OC-3 channels provide high speed synchronous optical fiber based full duplex data transmission capabilities operating at a terminating bit rate of 155 Mbps. An OC-3 channel has a capability of 84 DS-1s or three DS-3s.

SONET (Synchronous Optical Network) - A family of fiber optic transmission bit rates starting at 51.84 Mbps designed to provide the flexibility needed to transport many digital signals with different capacities. SONET defines an optical interface standard with optical line bit rates known as Optical Carrier (OC) signals. The OC signals are electrically defined synchronous transport signals. The base synchronous transport signal rate is 51.84 Mbps (OC1) and higher rate groupings are multiples of the OC1 base rate. SONET transmission equipment allows easy access to low speed signals such as DS-0, DS-1, and DS-3 without multi-stage multiplexing and demultiplexing.

METRO ETHERNET SERVICE

DESCRIPTION OF SERVICE

Metro Ethernet Service is a group of high speed, fiber optic-based services that provide connectivity at, and transport between, two or more customer designated locations (CDLs) served by one or more serving wire centers (SWCs) connected to one or more Metro Ethernets.

The Metro Ethernet Service features shown herein may be used to provide the digital channel facility for Digital Channel Service, as set forth in the Frontier General Exchange Product Guide.

Metro Ethernet Service transport is non-distance sensitive and is provided for a monthly flat rated recurring charge per transport facility.

Metro Ethernet Service is available to all customers in the Company's serving areas in which Metro Ethernets are defined. A list of the Metro Ethernets, including a list of the SWCs interconnected to each Metro Ethernet and where Metro Ethernet Service is available, will be provided upon request.

Metro Ethernet Service consists of the following services:

- Metro Ethernet DS-1 Service
- Metro Ethernet Digital Channel Service
- Metro Ethernet ISDN - Primary Rate Interface (PRI) Service
- Metro Ethernet DS-3 Service
- Metro Ethernet Ethernet (IEEE 802.3) Service
- Metro Ethernet Token Ring (IEEE 802.5) Service

METRO ETHERNET SERVICE

REGULATIONS

Metro Ethernet Service is available only where technical capabilities permit.

Metro Ethernet Service will only be used to interconnect customer locations within the LATA.

The network point of demarcation for Metro Ethernet Service is on the electrical side of the Company provided Network Interface at the customer's premises. The customer is responsible for providing all facilities and cabling necessary to connect customer equipment to the network interface.

It is the customer's responsibility to ensure that the customer's equipment provides industry standard electrical signals compatible with Metro Ethernet Service transport transmission.

The Company will work cooperatively with the customer to ensure that the customer orders Metro Ethernet Transport bandwidth capacity sufficient only to satisfy the customer's requirements.

The bandwidth required for any given Metro Ethernet Service Activation(s) for the associated Metro Ethernet Services terminated on CDLs on a specific Metro Ethernet may not exceed the total Metro Ethernet Transport bandwidth ordered for those Metro Ethernet Services.

When Metro Ethernet Service is extended from currently existing fiber optic facilities, special construction charges may apply. These extensions may only utilize fiber optic facilities.

METRO ETHERNET SERVICE

RATES AND CHARGES

There are four Metro Ethernet Service rate element categories:

- Metro Ethernet CDL Connect
- Metro Ethernet CO Connect
- Metro Ethernet Transport
- Metro Ethernet Service Activation

Metro Ethernet CDL Connect

The Metro Ethernet CDL Connect element is a flat-rated monthly recurring charge (MRC) that provides the basic platform for customer access to the Company's Metro Ethernet. The Metro Ethernet CDL Connect element provides the Network Node at the point of demarcation at the CDL and provides the fiber optic link between the CDL and the serving wire center of the CDL.

The Metro Ethernet CDL Connect elements are provided for use with the Metro Ethernet Service product guide. The Metro Ethernet Connect elements may also be provided for use with DS-1 Service, as set forth in Section 4 of this product guide or Digital Channel Service and with ISDN-PRI Service as set forth in the General Exchange Product Guide.

There are two Metro Ethernet CDL Connect rate elements:

- Metro Ethernet DS-3 CDL Connect
- Metro Ethernet OC-3 CDL Connect

A nonrecurring charge (NRC) and a monthly recurring charge (MRC) for each selected Metro Ethernet CDL Connect element will apply for each CDL at which an individual Metro Ethernet Service terminates.

The Metro Ethernet CDL Connect elements are offered as an Optional Payment Plan (OPP) of a 3-year, 5-year or 7-year plan. A nonrecurring charge does not apply when the customer subscribes to a 7-year OPP.

The Metro Ethernet DS-3 and OC-3 CDL Connect elements may be used to provide DS-1 digital facilities to connect the customer's premises and its local serving wire center. (See DS-1 Service in Section 4 of this product guide or Digital Channel Service and ISDN-PRI Service in the Frontier General Exchange Product Guide.) One MRC, for either the Metro Ethernet DS-3 CDL Connect element or the Metro Ethernet OC-3 CDL Connect element, will apply each time either element is used to link the customer's premises or CDL with the serving wire center (SWC).

In addition to the Metro Ethernet CDL Connect Nonrecurring charges, appropriate Service Order charges from the General Exchange Product Guide apply.

METRO ETHERNET SERVICE

RATES AND CHARGES (Continued)

Metro Ethernet CO Connect

The Metro Ethernet CO Connect element is a flat-rated monthly recurring charge (MRC) that provides the capability to connect DS-1 Special Access Lines (SALs). (See Section 4 of this product guide.)

The Metro Ethernet DS-1 CO Connect rate element applies in lieu of:

- the DS-1 Special Transport Termination rate element as specified in Section 4 of this product guide;

- the Metro Ethernet CDL Connect charge as specified in this product guide.

Metro Ethernet DS-1 CO Connect rate element is offered without a Minimum Termination Liability beyond one month.

The appropriate Service Order Charge, as specified in the General Exchange Product Guide, applies for the ordering and processing of a customer request for initial service and subsequent charges.

METRO ETHERNET SERVICE

RATES AND CHARGES (Continued)

Metro Ethernet Transport

The Metro Ethernet Transport element is a flat-rated monthly recurring charge (MRC) that provides for the interoffice transport between SWCs on Company defined Metro Ethernets. Metro Ethernet Transport varies by bandwidth and Metro Ethernet Transport MRCs are rated by bandwidth capacity.

Metro Ethernet Transport is provided in and rated for the following bandwidths:

1.544 Mbps
10 Mbps
16 Mbps
44.736 Mbps
155 Mbps

One Metro Ethernet Transport MRC applies for the specific amount of bandwidth provided on each Metro Ethernet.

When an individual Metro Ethernet Service terminates at CDLs that have the same serving wire center, Metro Ethernet Transport charges will not apply.

When a Metro Ethernet Service terminates on two or more Metro Ethernets, one Metro Ethernet Transport MRC applies for the specific amount of bandwidth for each Metro Ethernet traversed.

Metro Ethernet Transport is available only to customers subscribing to Metro Ethernet CDL Connect, or Metro Ethernet CO Connect with DS-1 SALs.

The appropriate Service Order charge from the General Exchange Product Guide will apply for any increases in the Metro Ethernet Transport bandwidth capacity.

Metro Ethernet Transport maybe converted to standard Special Access transport rates (i.e., per airline mile) at any time at no charge.

Metro Ethernet Transport is offered as an Optional Payment Plan (OPP) of a 3-year, 5-year or 7-year plan.

METRO ETHERNET SERVICE

RATES AND CHARGES (Continued)

Metro Ethernet Service Activation

The Metro Ethernet Service Activation element is a flat-rated monthly recurring charge (MRC) that provides the ability to terminate the network signal at the Network Node at the CDL and to convert that signal for the customer's use. There are four Metro Ethernet Service Activations, one for each Metro Ethernet Service. They are:

- Metro Ethernet DS-1 Service Activation
- Metro Ethernet DS-3 Service Activation
- Metro Ethernet Ethernet Service Activation
- Metro Ethernet Token Ring Service Activation

All the Metro Ethernet Service Activation elements are provided for use with the Metro Ethernet Service product guide. The Metro Ethernet DS-1 Service Activation element may also be provided for use with Digital Channel Service, as set forth in the General Exchange Product Guide. The Metro Ethernet DS-1 Service Activation element may also be provided for use with ISDN-PRI Service, as set forth in the General Exchange Product Guide.

Customers may order varying combinations of Metro Ethernet Service Activations in conjunction with either the Metro Ethernet DS-3 CDL Connect element or the Metro Ethernet OC-3 CDL Connect element.

One Metro Ethernet Service Activation MRC will apply for each CDL at which an associated Metro Ethernet Service terminates. When additional Metro Ethernet Services are added without the requirement for additional Metro Ethernet Connect (CDL or CO) or additional Metro Ethernet Transport, the Metro Ethernet Service Activation MRCs for the additional Metro Ethernet Services added will apply.

When Metro Ethernet DS-3 or OC-3 CDL Connect elements are used to provide DS-1 digital facilities connecting the customer's premises (or CDL) to the serving wire center via Digital Channel Service and ISDN-PRI Service, a Metro Ethernet DS-1 Service Activation applies for each DS-1 activated.

Metro Ethernet Service Activations are not required when customers order Metro Ethernet DS-1 CO Connect and Metro Ethernet Transport to connect DS-1 SALs to Metro Ethernet Transport.

The Metro Ethernet Service Activation-Additional nonrecurring charge (NRC) applies for service activations that are ordered subsequent to the initial installation of Metro Ethernet Service.

The appropriate Service Order Charge in the General Exchange Product Guide will apply when additional service activations are ordered.

Metro Ethernet Service Activation is offered as an Optional Payment Plan (OPP) of a 3-year, 5-year or 7-year plan.

METRO ETHERNET SERVICE

RATES AND CHARGES (Continued)

Optional Payment Plans (OPP)

All Metro Ethernet Service elements, with the exception of Metro Ethernet DS-1 CO Connect may be ordered under a three (3), five (5), or seven (7) year Optional Payment Plan (OPP). Any OPP for any of these services is subject to an OPP Termination Liability Charge. At any point during the time period for the selected OPP, the customer may convert the existing OPP to a different OPP with an available time period greater than the time period of the existing OPP, without penalty. At the end of the time period for the selected OPP, the customer may:

- Convert to a new three, five, or seven, year OPP without an NRC,
  or
- Continue at the completed OPP's rate on a month-to-month basis,
  or
- Discontinue service.

If, at the end of an OPP, the customer does not notify the Company of his or her acceptance of one of the above options, the Company will continue to bill the customer at the rates originally charged. The Termination Liability Charge will not apply to customers who have completed the initial OPP time period.

When a customer orders additional Metro Ethernet Services whose function depends on other Metro Ethernet Services installed on an earlier order, the following applies:

- The OPP time period for the additional services must be equal to or shorter than the remaining OPP time period for the Metro Ethernet Services installed earlier, or

- The OPP time period for the Metro Ethernet Services installed on an earlier order may be extended to be equal in length with the OPP time period for the additional services.

Where technical capabilities and facilities exist, customers may convert existing DS-1s, as provided for in Section 4 of this product guide, to Metro Ethernet Service without conversion charges (Termination Liability and Installation charges) as long as the total capacity of DS-1s purchased by the customer does not decrease.

METRO ETHERNET SERVICE

RATES AND CHARGES (Continued)

Optional Payment Plans (OPP) (Continued)

Under the three (3), and five (5) year OPP, a Nonrecurring Charge (NRC) applies to the first and each additional Metro Ethernet Connect established. Nonrecurring charges may be paid in three equal monthly installments.

Monthly Recurring Charges (MRCs) apply to each Metro Ethernet CDL and CO, Metro Ethernet Transport and Metro Ethernet Service Activation rate elements.

Termination Liability

(See General Rules and Regulations in the General Exchange Product Guide.)

METRO ETHERNET SERVICE

RATES AND CHARGES (Continued)

	Nonrecurring Charge (1)	Monthly Rate
Metro Ethernet CDL Connect, each		
DS-3		
3 Year OPP	$3,000.00	$1,600.00
5 Year OPP	1,500.00	1,500.00
7 Year OPP	None	1,425.00
OC-3		
3 Year OPP	$3,000.00	1,850.00
5 Year OPP	3,000.00	1,750.00
7 Year OPP	None	1,700.00
Metro Ethernet CO Connect, each		
DS-1 CO	None	60.00
Metro Ethernet Transport, each		
1.544 Mbps		
3 Year OPP	--	90.00
5 Year OPP	--	80.00
7 Year OPP	--	70.00
10 Mbps		
3 Year OPP	--	400.00
5 Year OPP	--	350.00
7 Year OPP	--	325.00
16 Mbps		
3 Year OPP	--	600.00
5 Year OPP	--	525.00
7 Year OPP	--	475.00
45 Mbps		
3 Year OPP	--	925.00
5 Year OPP	--	900.00
7 Year OPP	--	875.00
155 Mbps		
3 Year OPP	--	2,550.00
5 Year OPP	--	2,500.00
7 Year OPP	--	2,350.00

(1) In addition to applicable Service Order Charge in the General Exchange Product Guide.

METRO ETHERNET SERVICE

RATES AND CHARGES

	Nonrecurring Charge (1)	Monthly Rate
Metro Ethernet Service Activation, each		
DS-1 (1-7)		
3 Year OPP	--	$ 50.00
5 Year OPP	--	50.00
7 Year OPP	--	50.00
DS-1 (8 or More)	--	25.00
DS-3		
3 Year OPP	--	160.00
5 Year OPP	--	160.00
7 Year OPP	--	160.00
Ethernet		
3 Year OPP	--	525.00
5 Year OPP	--	500.00
7 Year OPP	--	475.00
Token Ring		
3 Year OPP	--	475.00
5 Year OPP	--	500.00
7 Year OPP	--	525.00

(1) In addition to applicable Service Order Charge in the General Exchange Product Guide.

ASYNCHRONOUS TRANSFER MODE (ATM) CELL RELAY SERVICE (CRS) [1, 2] (C)

I. APPLICATION

This section contains definitions, regulations and charges applicable to the provision of Asynchronous Transfer Mode (ATM) Cell Relay Service (CRS) furnished by the Company where conditions and facilities permit.

II. DEFINITIONS

In addition to the Definition of Terms set forth in the General Exchange Product Guide, the following definitions apply:

Hub - A Company designated serving wire center that is equipped to provide service.

Maximum Burst Size - The term "Maximum Burst Size" (MBS) denotes the consecutive number of ATM cells that can enter the ATM Cell Relay Service network above the Sustained Cell Rate level and below the Peak Cell Rate level.

III. REGULATIONS

In addition to the General Rules and Regulations set forth in the General Exchange Product Guide, the following Regulations apply:

A. Description of Service

Asynchronous Transfer Mode (ATM) Cell Relay Service (CRS) is a telecommunications transport and switching service that provides for high-speed connectivity between Customer-designated locations. ATM CRS consists of a User Network Interface (UNI) interface. This interface is available in various configurations including Port with Access Line Connection and Port Only Connection, with either incremental or full bandwidth.

The UNI Port with Access Line Connection is a dedicated digital line that provides a link from the Customer's premises to one of Company's ATM CRS hubs. UNIs are also provisioned as an Inverse Multiplexing ATM (IMA) Port with Access Line Connection as defined in III.B.2 and as Port Only Connection as defined in III.B.3.

ATM CRS is a fast-packet, cell-based technology that can support user applications requiring high-bandwidth, high-performance transport and switching. This connectivity is provided via Permanent Virtual Circuits (PVCs) and/or Switched Virtual Circuits (SVCs) that are implemented over access facilities and switches that are dedicated to high-speed telecommunications services.

UNIs, Port with Access Line Connections, UNI IMA Port with Access Line Connections, UNI Port Only Connections, PVCs and SVCs are further described in III.B.

[1] Effective February 15, 2013, Asynchronous Transfer Mode (ATM) Service is grandfathered and is no longer available to new customers. Existing customers may maintain their services; however, upon expiration of the term commitment, the service will lapse into a one-year service arrangement. Moves or changes to subscribers' existing services are permissible; however, the customers' term commitment per circuit will not be extended.

[2] Effective May 31, 2022, Frontier will no longer support Moves, Adds or Changes nor new installations for [ATM] Service. Upon service term expiration, the service will transition to a Month-to-Month service arrangement. (N) (N)

ASYNCHRONOUS TRANSFER MODE (ATM) CELL RELAY SERVICE (CRS) [1, 2] (C)

III. REGULATIONS (Cont'd)

B. Service Components

The major components of ATM CRS are:

UNI Port with Access Line Connection
UNI IMA Port with Access Line Connection
Port Only Connection
Permanent Virtual Circuit (PVC)
Switched Virtual Circuit (SVC)
Effective Bandwidth

1. UNI Port with Access Line Connection

UNI Port with Access Line Connections, which are available at the DS1, DS3, OC3c, and OC12c levels, provide dedicated transport between Customer-designated premises and an ATM CRS hub. There are two types of UNIs: Full and Incremental. The Full UNI includes all available bandwidth in one rate, and the Incremental UNI is sold and provisioned with PVC and/or SVC bandwidth increments. The DS1 UNI is not offered in increments.

In order for Customer traffic to be carried on the network, each Incremental UNI requires at least one 5 Mbps increment of either PVC or SVC bandwidth. The Customer may elect to subscribe to multiple PVCs. This feature is established over the UNI via connection identifiers, which enables the Customer to have virtual connections to various locations.

UNIs are provided at nominal data rates of 1.544 Mbps (DS1), 44.736 Mbps (DS3), 155.52 Mbps (OC3c), or 622 Mbps (OC12c). OC3c and OC12c are provided as a concatenated signal in STS-3c and STS-12c (Synchronous Transport Signal) formats, respectively.

The rates and charges for a UNI are differentiated by the capacity of the UNI, the location where the UNI originates (i.e., Customer-designated premises) and mileage ranges (expressed as tiers) associated with extending the UNI to the wire center designated as the ATM CRS hub.

The OC3c and OC12c UNI Port with Access Line Connections are provisioned on Protected or Protected Diverse Synchronous Optical Network (SONET) facilities. SONET is a standards-based fiber optic communication network that transports both asynchronous and synchronous digital signals using the Synchronous Transport Signal (STS) format. ATM OC3c and OC12c Protected SONET UNI Port with Access Line Connections are provisioned over SONET as a survivable service with an alternate (not diverse) facility between the central office and the Customer premises. ATM OC3c and OC12c Protected Diverse SONET UNI Port with Access Line Connections are provisioned over SONET as a survivable service with an alternate and diverse path between the ATM CRS hub and the Customer premises. DS3, OC3c, OC12c and other interfaces, both electrical and optical, are supported and defined to the technical specifications set forth in III.C.

[1] Effective February 15, 2013, Asynchronous Transfer Mode (ATM) Service is grandfathered and is no longer available to new customers. Existing customers may maintain their services; however, upon expiration of the term commitment, the service will lapse into a one-year service arrangement. Moves or changes to subscribers' existing services are permissible; however, the customers' term commitment per circuit will not be extended.

[2] Effective May 31, 2022, Frontier will no longer support Moves, Adds or Changes nor new installations for [ATM] Service. Upon service term expiration, the service will transition to a Month-to-Month service arrangement. (N) (N)

ASYNCHRONOUS TRANSFER MODE (ATM) CELL RELAY SERVICE (CRS) [1, 2] (C)

III. REGULATIONS (Cont'd)

B. Service Components (Cont'd)

2. UNI Inverse Multiplexing ATM (IMA) Port with Access Line Connection

UNI IMA Port with Access Line Connection permits the provisioning of bandwidth greater than DS1 and less than DS3 by binding together multiple DS1 facilities. The inverse multiplexer at each end of the connection aggregates and de-aggregates multiple parallel DS1 leased lines into a single higher speed link. IMA will be offered as Full bandwidth only. Two to six DS1 facilities will be permitted in an IMA group providing nominal aggregated bandwidth from three to nine megabits per second. IMA allows for all class of service parameters up to the combined nominal line rate of the aggregated DS1s and all PVCs and/or SVCs that will fit within the bandwidth. Ordering of DS1s within an IMA group must be done in ascending order. Disconnecting DS1s within an IMA group must be done in a descending order. Customer must purchase a minimum of two IMA DS1s.

Requests to change existing UNI Port with Access Line Connections to UNI IMA Port with Access Line Connections will be treated as a disconnect and new install. Termination liability charges, as set forth in General Rules and Regulations of the General Exchange Product Guide, may apply.

[1] Effective February 15, 2013, Asynchronous Transfer Mode (ATM) Service is grandfathered and is no longer available to new customers. Existing customers may maintain their services; however, upon expiration of the term commitment, the service will lapse into a one-year service arrangement. Moves or changes to subscribers' existing services are permissible; however, the customers' term commitment per circuit will not be extended.

[2] Effective May 31, 2022, Frontier will no longer support Moves, Adds or Changes nor new installations for [ATM] Service. Upon service term expiration, the service will transition to a Month-to-Month service arrangement. (N) (N)

ASYNCHRONOUS TRANSFER MODE (ATM) CELL RELAY SERVICE (CRS) [1, 2] (C)

III. REGULATIONS (Cont'd)

B. Service Components (Cont'd)

3. Port Only Connection

Port Only Connections can be established as a User Network Interface (UNI) arrangement. The UNI Port Only connection provides an ATM Cell Relay Network connection based on the port connection speeds of DS1, DS3, OC3c and OC12c. The ATM port speed will be consistent with the channel speed of the access channel. The actual throughput of Customer traffic cannot exceed the bandwidth of the access channel and port speed.

UNI Port Only Connections are available as either Incremental or Full. This refers to the bandwidth that is required to provision PVCs on the port. Incremental ports come with no bandwidth and bandwidth is purchased in increments based on Customer bandwidth requirements. Full ports come with all bandwidth included up to the maximum rate of the port. Each port can accommodate multiple PVCs or SVCs depending on the bandwidth purchased. UNI Port Only is available on a one-year, two-year, three-year and five-year term.

Customers may access Port Only Connections via Company-provided digital access facilities or via facilities provided by another carrier. When access facilities are provided by the Company, the associated regulations, rates and charges under the appropriate Company tariff or product guide shall apply in addition to the regulations, rates and charges associated with ATM CRS. Company-provided access facilities may also be provisioned on an Individual Case Basis (ICB) where access facilities are not generally available under the applicable tariff/product guide. Interconnection charges to connect access line services provided by the Company or another carrier may apply and will be billed separately. Any special construction or nonstandard charges assessed by the carrier supplying the access facilities will be the responsibility of the Customer.

1 Effective February 15, 2013, Asynchronous Transfer Mode (ATM) Service is grandfathered and is no longer available to new customers. Existing customers may maintain their services; however, upon expiration of the term commitment, the service will lapse into a one-year service arrangement. Moves or changes to subscribers' existing services are permissible; however, the customers' term commitment per circuit will not be extended.

2 Effective May 31, 2022, Frontier will no longer support Moves, Adds or Changes nor new installations for [ATM] Service. Upon service term expiration, the service will transition to a Month-to-Month service arrangement. (N) (N)

ASYNCHRONOUS TRANSFER MODE (ATM) CELL RELAY SERVICE (CRS) [1, 2] (C)

III. REGULATIONS (Cont'd)

B. Service Components (Cont'd)

4. Permanent Virtual Circuit (PVC)

The PVC defines a virtual connection across a UNI between the Customer premises and Company's ATM CRS hub. Each UNI requires at least one PVC in order for Customer traffic to traverse the network. Each ATM cell carries a unique tag which identifies that ATM CRS cell as belonging to a particular PVC. A PVC is a logical channel connecting two or more Customer-designated premises with virtual connections through a Company provided ATM CRS switch(es). The PVCs may be provided on a point-to-point or point-to-multipoint basis. When a PVC is provided as a point-to-point virtual connection, transmission is bi-directional allowing for ATM CRS cells to be transmitted or received over the same PVC. For point-to-multipoint virtual connections, transmission is provided as transmit only. The virtual connection is set up by Company based on information contained on a service order rather than by dial-up signaling.

PVCs consist of two types: Virtual Channel Connections (VCCs) and Virtual Path Connections (VPCs). A VCC is a type of PVC with independent identity and defined service parameters that are provisioned via service order and cannot be altered by the Customer without additional service order activity. A VPC is a type of PVC with defined service parameters that is provisioned via service order. Customers may provision their own virtual channels within the VPC, provided that the sum of the service parameters of all of the virtual channels does not exceed the aggregate service parameters of the VPC.

1 Effective February 15, 2013, Asynchronous Transfer Mode (ATM) Service is grandfathered and is no longer available to new customers. Existing customers may maintain their services; however, upon expiration of the term commitment, the service will lapse into a one-year service arrangement. Moves or changes to subscribers' existing services are permissible; however, the customers' term commitment per circuit will not be extended.

2 Effective May 31, 2022, Frontier will no longer support Moves, Adds or Changes nor new installations for [ATM] Service. Upon service term expiration, the service will transition to a Month-to-Month service arrangement. (N) (N)

ASYNCHRONOUS TRANSFER MODE (ATM) CELL RELAY SERVICE (CRS) [1, 2] (C)

III. REGULATIONS (Cont'd)

B. Service Components (Cont'd)

5. Switched Virtual Circuit (SVC)

SVCs are similar in structure to PVCs, but SVCs are provisioned on demand by Customer premises equipment that signals the ATM cell relay network to set up and tear down logical connections. The network will respond to these requests by provisioning a virtual connection across the network based on the class of service parameters requested, provided that sufficient network resources are available to establish the connection. Each UNI that is SVC signal enabled will be provided with a SVC International Code Designator (ICD) prefix that will uniquely identify the UNI. Customers must use this Company assigned prefix when requesting SVC virtual connections across the Company Cell Relay Network. Each Constant Bit Rate (CBR) and Variable Bit Rate (VBR) SVC will be limited to a maximum Peak Cell Rate of 20 Mbps and a maximum Sustained Cell Rate of 20 Mbps.

Closed User Group (CUG) capability is a feature associated with SVCs. A CUG provides the ability to contain SVC calls between certain UNIs. A CUG functionally groups UNIs into logical associations and allows calling privileges to be specified network wide. A CUG provides a network-wide mechanism for access control. CUGs provide a logical grouping of UNIs, creating a SVC community of interest.

[1] Effective February 15, 2013, Asynchronous Transfer Mode (ATM) Service is grandfathered and is no longer available to new customers. Existing customers may maintain their services; however, upon expiration of the term commitment, the service will lapse into a one-year service arrangement. Moves or changes to subscribers' existing services are permissible; however, the customers' term commitment per circuit will not be extended.

[2] Effective May 31, 2022, Frontier will no longer support Moves, Adds or Changes nor new installations for [ATM] Service. Upon service term expiration, the service will transition to a Month-to-Month service arrangement. (N) (N)

ASYNCHRONOUS TRANSFER MODE (ATM) CELL RELAY SERVICE (CRS) [1, 2] (C)

III. REGULATIONS (Cont'd)

B. Service Components (Cont'd)

6. Effective Bandwidth

Effective bandwidth is the bandwidth reserved for each logical connection (PVC or SVC) that is set up across a UNI. It is based on the Peak Cell Rate (PCR), Sustained Cell Rate (SCR), Maximum Burst Size, and the class of service parameters selected, i.e., CBR, VBRrt (Variable Bit Rate real time), VBRnrt (Variable Bit Rate non-real time), or UBR (Unspecified Bit Rate). The total effective bandwidth of all the logical connections on a UNI cannot exceed the total bandwidth available on the UNI. Effective bandwidth prices do not vary by class of service level selected. However, effective bandwidth is consumed in varying degrees based on the class of service parameters selected. The higher the class of service, the more bandwidth will be reserved. A CBR PVC with the same PCR as a VBR PVC will reserve more effective bandwidth.

C. Technical Specifications

The technical specifications for ATM CRS are delineated in Technical References TR-NWT-001112, GR-1110-CORE, GR-1248-CORE, and SR-3330.

The technical specifications for DS1 and DS3 signals are delineated in TR-INS-000342.

The technical specifications for OC3c and OC12c signals are delineated in GR-253-CORE, Issue 2.

The technical specifications for UNIs are delineated in ATM Forum ATM User Network Interface Specifications V3.0, af-uni-0010.001, and V3.1, af-uni-0010.002. Interface specifications for Customer-provided ATM CRS compatible premises equipment or devices must also be in accordance with the specifications defined in these documents.

[1] Effective February 15, 2013, Asynchronous Transfer Mode (ATM) Service is grandfathered and is no longer available to new customers. Existing customers may maintain their services; however, upon expiration of the term commitment, the service will lapse into a one-year service arrangement. Moves or changes to subscribers' existing services are permissible; however, the customers' term commitment per circuit will not be extended.

[2] Effective May 31, 2022, Frontier will no longer support Moves, Adds or Changes nor new installations for [ATM] Service. Upon service term expiration, the service will transition to a Month-to-Month service arrangement. (N) (N)

ASYNCHRONOUS TRANSFER MODE (ATM) CELL RELAY SERVICE (CRS) [1, 2] (C)

III. REGULATIONS (Cont'd)

D. Provision of Service

ATM CRS includes:

1. At least one UNI Port with Access Line or Port Only or two UNI IMA Port with Access Lines, which has a maximum nominal capacity for either DS1 (1.544Mbps), DS3 (45 Mbps), OC3c (155 Mbps), or OC12c (622 Mbps). The OC3c and OC12c UNIs are provisioned over Protected or Protected Diverse SONET. The Protected and Protected Diverse SONET facilities provide a backup facility that automatically switches in the event of a failure on the primary facility.

2. Unlimited usage on purchased bandwidth.

3. Incremental UNIs must have at least one increment of effective bandwidth (either PVC or SVC) in order for traffic to traverse the network. The DS1, DS3, OC3c, and OC12c Full UNIs are equipped with the full effective bandwidth.

4. Either one or more PVCs. When PVC bandwidth is purchased, one or more PVCs must be selected for Customer traffic to traverse the network.

5. Two types of PVCs, (i) Virtual Channel Connections (VCCs) and (ii) Virtual Path Connections (VPCs), which support the following Classes of Service:

   a. Constant Bit Rate (CBR)
   b. Variable Bit Rate real time (VBRrt)
   c. Variable Bit Rate non-real time (VBRnrt)
   d. Unspecified Bit Rate (UBR)

E. Tier Structure for Local Serving Offices

Locations (wire centers) that provide ATM CRS have been designated as ATM hubs. Each local serving office has been placed in a Tier 1, 2 or 3, based on its location relative to the closest ATM hub.

F. Service Functionality

The ATM CRS functionality consists of transporting 53-byte cells of information from the Customer location to a Company ATM hub over a UNI. The traffic is routed in the switch to another UNI, or other suitable network connection.

[1] Effective February 15, 2013, Asynchronous Transfer Mode (ATM) Service is grandfathered and is no longer available to new customers. Existing customers may maintain their services; however, upon expiration of the term commitment, the service will lapse into a one-year service arrangement. Moves or changes to subscribers' existing services are permissible; however, the customers' term commitment per circuit will not be extended.

[2] Effective May 31, 2022, Frontier will no longer support Moves, Adds or Changes nor new installations for [ATM] Service. Upon service term expiration, the service will transition to a Month-to-Month service arrangement. (N) (N)

ASYNCHRONOUS TRANSFER MODE (ATM) CELL RELAY SERVICE (CRS) [1, 2] (C)

III. REGULATIONS (Cont'd)

G. Class of Service Parameters

1. Constant Bit Rate (CBR)

a. Peak/Sustained Cell Rate:

Customer specified in increments of 64 Kbps up to the maximum speed of the UNI.

b. Non-conforming cells:

Discarded

c. Cell Delay Variation Tolerance (CDVT):

DS1 = 600 microseconds
DS3 = 600 microseconds
OC3c = 600 microseconds
OC12c = 600 microseconds

2. Variable Bit Rate (VBR) Real Time/Non-Real Time

a. Sustained Cell Rate (SCR):

Customer specified in increments of 64 Kbps up to the maximum speed of the UNI.

b. Peak Cell Rate (PCR):

Customer selectable in increments of 64 Kbps up to line rate. Default is 200% of SCR for PVCs. (The ratio of PCR to SCR will be signaled by CPE for SVCs. Therefore, there is no default value.)

c. Non-conforming cells:

Discarded

d. Cell Delay Variation Tolerance (CDVT):

DS1 = 600 microseconds
DS3 = 600 microseconds
OC3c = 600 microseconds
OC12c = 600 microseconds

[1] Effective February 15, 2013, Asynchronous Transfer Mode (ATM) Service is grandfathered and is no longer available to new customers. Existing customers may maintain their services; however, upon expiration of the term commitment, the service will lapse into a one-year service arrangement. Moves or changes to subscribers' existing services are permissible; however, the customers' term commitment per circuit will not be extended.

[2] Effective May 31, 2022, Frontier will no longer support Moves, Adds or Changes nor new installations for [ATM] Service. Upon service term expiration, the service will transition to a Month-to-Month service arrangement. (N) (N)

ASYNCHRONOUS TRANSFER MODE (ATM) CELL RELAY SERVICE (CRS) [1, 2] (C)

III. REGULATIONS (Cont'd)

H. Special Conditions

1. ATM CRS is available where facilities and conditions permit. For locations where the Customer requests ATM CRS and digital, SONET or Direct Fiber but facilities are not available, special construction charges, as listed in the General Exchange Product Guide, may apply for the installation of the necessary facilities.

2. Maintenance Window

To meet the Customers' requirements, occasional network upgrades must be performed. These network upgrades are needed to provide improved performance and new features. Generally, these upgrades will be performed between the hours of 11 PM and 8 AM. Network upgrades are planned to provide Customers reasonable and timely notification in order to minimize any impact on the Customers' service.

I. Responsibility of the Customer

The Customer must provide the necessary compatible premise equipment or ATM CRS device capable of interfacing with the Company's ATM CRS.

J. Responsibility of the Company

Company is responsible for service up to and including the network interface. Company's responsibility is limited to the furnishing of communications facilities and switches suitable for ATM CRS.

ATM CRS is supported by the Company's Single Point of Contact (SPOC) center, which provides continuous support for ATM CRS 24 hours per day, seven days per week (24x7) with the ability to manage all of the Customer's ATM CRS as a single network. The SPOC performs maintenance, trouble resolution and network management functions on a 24x7 basis. Service order processing and network installation functions are performed only during normal business hours.

K. Application of Rates and Charges

1. Rate Elements

The following rate elements are applicable to ATM CRS:

- User Network Interfaces (UNIs) Port with Access Line Connection
  UNI Inverse Multiplexing ATM (IMA) Port with Access Line Connection
- User Network Interfaces (UNIs) Port Only Connection
- Permanent Virtual Circuits (PVCs)
- Effective Bandwidth for Incremental UNIs
- Closed User Groups (CUG)
- Administrative Charge

[1] Effective February 15, 2013, Asynchronous Transfer Mode (ATM) Service is grandfathered and is no longer available to new customers. Existing customers may maintain their services; however, upon expiration of the term commitment, the service will lapse into a one-year service arrangement. Moves or changes to subscribers' existing services are permissible; however, the customers' term commitment per circuit will not be extended.

[2] Effective May 31, 2022, Frontier will no longer support Moves, Adds or Changes nor new installations for [ATM] Service. Upon service term expiration, the service will transition to a Month-to-Month service arrangement. (N) (N)

ASYNCHRONOUS TRANSFER MODE (ATM) CELL RELAY SERVICE (CRS) [1, 2] (C)

III. REGULATIONS (Cont'd)

I. Application of Rates and Charges (Cont'd)

1. Rate Elements (Cont'd)

a. User Network Interfaces (UNIs) Port with Access Line Connection

A monthly rate apply on a per Port With Access Line basis, based on the speed (i.e., DS1, DS3, OC3c or OC12c) and/or type (i.e., Full or Incremental, SONET - Protected or Protected Diverse) of the access connection. UNI Port and Access is offered as a one-year, two-year, three-year or five-year Extended Service Plan (ESP). No nonrecurring charges apply.

b. UNI Inverse Multiplexing ATM (IMA) Port with Access Line Connection

A monthly rate applies on a per DS1 basis for each sequential DS1 ordered up to the desired bandwidth (i.e., 3 Mbps, 4.5 Mbps, 6 Mbps, 7.5 Mbps or 9 Mbps). IMA is offered as a one-year, two-year, three-year or five-year ESP. DS1s within an IMA group added subsequent to the initial installation of the first two DS1s will have their own term period. No nonrecurring charges apply.

c. UNI Port Only Connection

A monthly rate applies on a per Port Only basis, based on the speed (i.e., DS1, DS3, OC3c or OC12c) and/or type (i.e., Full or Incremental) of the port only connection. UNI Port Only is offered as a one-year, two-year, three-year or five-year Extended Service Plan (ESP). No nonrecurring charges apply.

d. Permanent Virtual Circuits (PVCs)

A nonrecurring charge applies per order for Virtual Channel Connection (VCC) or Virtual Path Connection (VPC). PVCs are ordered per UNI. If multiple UNIs are involved, a nonrecurring charge will apply to each UNI Port on which the virtual connections will reside. The nonrecurring charge does not apply when PVCs are installed at the same time as the respective UNIs.

[1] Effective February 15, 2013, Asynchronous Transfer Mode (ATM) Service is grandfathered and is no longer available to new customers. Existing customers may maintain their services; however, upon expiration of the term commitment, the service will lapse into a one-year service arrangement. Moves or changes to subscribers' existing services are permissible; however, the customers' term commitment per circuit will not be extended.

[2] Effective May 31, 2022, Frontier will no longer support Moves, Adds or Changes nor new installations for [ATM] Service. Upon service term expiration, the service will transition to a Month-to-Month service arrangement. (N) (N)

ASYNCHRONOUS TRANSFER MODE (ATM) CELL RELAY SERVICE (CRS) [1, 2] (C)

III. REGULATIONS (Cont'd)

I. Application of Rates and Charges (Cont'd)

1. Rate Elements (Cont'd)

e. Effective Bandwidth for Incremental UNIs

A monthly rate applies for incremental UNIs for CBR or VBR PVC and SVC bandwidth at 5 Mbps for DS3 or OC3c and at 15 Mbps for OC12c. A monthly rate also applies for incremental UNIs for UBR PVC and SVC bandwidth for DS3, OC3c and OC12c. No nonrecurring charges apply.

The monthly rate for PVC and/or SVC UBR bandwidth will be waived when the combined VBR and CBR effective bandwidth purchased (either SVC or PVC or any combination) is equal to at least 50% of the effective bandwidth capacity of the UNI. When UBR bandwidth is made available, it is available for both PVCs and SVCs. No nonrecurring charges apply.

f. Closed User Groups (CUG)

A nonrecurring charge applies per order and per UNI for each CUG established and for each subsequent CUG member added to a CUG. The nonrecurring charge does not apply when a CUG is installed at the same time as the respective UNI.

g. Administrative Charge

A nonrecurring charge applies (per order, per UNI) when Customer initiates a change to one or more of the following: UNI bandwidth, PVCs, class of service parameters, and/or other service parameters that do not require changes in physical facilities and that can be provisioned by Company without the dispatch of a technician to Customer location. For each service order issued, the charge will be one Administrative Charge regardless of the number of changes made. The Administrative Charge does not apply for those items ordered on the same service order with the installation of a UNI.

2. Minimum Period

The minimum period for ATM CRS is one month.

3. Extended Service Plan

The ATM CRS UNI Port with Access Line Connection, UNI IMA Port with Access Line Connection and Access and UNI Port Only Connection rate elements are available under an ESP.

Term commitments of one-, two-, three- and five-years are available to ATM CRS UNI Port With Access Line Connection and UNI Port Only Customers and term commitments of one-, two-, three- and five-years are available to UNI IMA Port With Access Line Connections at the applicable rates set forth in IV., regardless of when they subscribe to an ESP arrangement.

[1] Effective February 15, 2013, Asynchronous Transfer Mode (ATM) Service is grandfathered and is no longer available to new customers. Existing customers may maintain their services; however, upon expiration of the term commitment, the service will lapse into a one-year service arrangement. Moves or changes to subscribers' existing services are permissible; however, the customers' term commitment per circuit will not be extended.

[2] Effective May 31, 2022, Frontier will no longer support Moves, Adds or Changes nor new installations for [ATM] Service. Upon service term expiration, the service will transition to a Month-to-Month service arrangement. (N) (N)

ASYNCHRONOUS TRANSFER MODE (ATM) CELL RELAY SERVICE (CRS) [1, 2] (C)

III. REGULATIONS (Cont'd)

I. Application of Rates and Charges (Cont'd)

3. Extended Service Plan (Cont'd)

a. Termination Liability

Effective February 15, 2013 does not apply to ATM Service.

4. Moves

When the Customer requests a move or relocation of the UNI, the move or relocation will be treated as a termination of the existing service and the establishment of a new service.

5. Special Facilities Routing

The Customer may request that the facilities used to provide ATM CRS be specially routed. Additional charges will apply based on cost.

6. Acceptance Testing

At no additional charge, the Company will, at the Customer's request, cooperatively test, at the time of installation. Acceptance tests will include tests for the parameters applicable to the service as specified in the order for service.

[1] Effective February 15, 2013, Asynchronous Transfer Mode (ATM) Service is grandfathered and is no longer available to new customers. Existing customers may maintain their services; however, upon expiration of the term commitment, the service will lapse into a one-year service arrangement. Moves or changes to subscribers' existing services are permissible; however, the customers' term commitment per circuit will not be extended.

[2] Effective May 31, 2022, Frontier will no longer support Moves, Adds or Changes nor new installations for [ATM] Service. Upon service term expiration, the service will transition to a Month-to-Month service arrangement. (N) (N)

ASYNCHRONOUS TRANSFER MODE (ATM) CELL RELAY SERVICE (CRS) [1, 2] (C)

IV. RATES AND CHARGES

A. Rates and Charges

1. UNI Port with Access Line Connection

	One-Year Rate	Two-Year Rate	Three-Year Rate	Five-Year Rate
a. DS1, each				
Full				
Tier 1 (0 to 5 Miles)	$ 805.00	$ 765.00	$ 684.00	$ 644.00
Tier 2 (Over 5 to 25 Miles)	805.00	765.00	684.00	644.00
Tier 3 (Over 25 to 50 Miles)	805.00	765.00	684.00	644.00
b. DS3, each				
Full				
Tier 1 (0 to 5 Miles)	4,060.00	3,857.00	3,451.00	3,247.00
Tier 2 (Over 5 to 25 Miles)	4,776.00	4,538.00	4,060.00	3,821.00
Tier 3 (Over 25 to 50 Miles)	5,731.00	5,444.00	4,872.00	4,585.00
Incremental				
Tier 1 (0 to 5 Miles)	3,407.00	3,235.00	2,895.00	2,725.00
Tier 2 (Over 5 to 25 Miles)	4,007.00	3,807.00	3,407.00	3,205.00
Tier 3 (Over 25 to 50 Miles)	4,808.00	4,568.00	4,088.00	3,847.00

[1] Effective February 15, 2013, Asynchronous Transfer Mode (ATM) Service is grandfathered and is no longer available to new customers. Existing customers may maintain their services; however, upon expiration of the term commitment, the service will lapse into a one-year service arrangement. Moves or changes to subscribers' existing services are permissible; however, the customers' term commitment per circuit will not be extended.

[2] Effective May 31, 2022, Frontier will no longer support Moves, Adds or Changes nor new installations for [ATM] Service. Upon service term expiration, the service will transition to a Month-to-Month service arrangement. (N) (N)

ASYNCHRONOUS TRANSFER MODE (ATM) CELL RELAY SERVICE (CRS) [1, 2] (C)

IV. RATES AND CHARGES (Cont'd)

A. Rates and Charges (Cont'd)

1. UNI Port with Access Line Connection (Cont'd)

	One-Year Rate	Two-Year Rate	Three-Year Rate	Five-Year Rate
c. OC3c, each				
SONET				
Full, Protected				
Tier 1 (0 to 5 Miles)	$7,659.00	$7,277.00	$6,511.00	$6,127.00
Tier 2 (Over 5 to 25 Miles)	9,011.00	8,561.00	7,659.00	7,209.00
Tier 3 (Over 25 to 50 Miles)	10,813.00	10,272.00	9,192.00	8,650.00
Full, Protected Diverse				
Tier 1 (0 to 5 Miles)	9,353.00	8,886.00	7,951.00	7,482.00
Tier 2 (Over 5 to 25 Miles)	11,003.00	10,453.00	9,353.00	8,803.00
Tier 3 (Over 25 to 50 Miles)	13,204.00	12,544.00	11,224.00	10,563.00
Incremental, Protected				
Tier 1 (0 to 5 Miles)	5,336.00	5,070.00	4,536.00	4,269.00
Tier 2 (Over 5 to 25 Miles)	6,278.00	5,964.00	5,336.00	5,023.00
Tier 3 (Over 25 to 50 Miles)	7,534.00	7,158.00	6,403.00	6,027.00
Incremental, Protected Diverse				
Tier 1 (0 to 5 Miles)	7,030.00	6,679.00	5,976.00	5,624.00
Tier 2 (Over 5 to 25 Miles)	8,271.00	7,856.00	7,030.00	6,617.00
Tier 3 (Over 25 to 50 Miles)	9,924.00	9,428.00	8,436.00	7,940.00

1 Effective February 15, 2013, Asynchronous Transfer Mode (ATM) Service is grandfathered and is no longer available to new customers. Existing customers may maintain their services; however, upon expiration of the term commitment, the service will lapse into a one-year service arrangement. Moves or changes to subscribers' existing services are permissible; however, the customers' term commitment per circuit will not be extended.

2 Effective May 31, 2022, Frontier will no longer support Moves, Adds or Changes nor new installations for [ATM] Service. Upon service term expiration, the service will transition to a Month-to-Month service arrangement. (N) (N)

ASYNCHRONOUS TRANSFER MODE (ATM) CELL RELAY SERVICE (CRS) [1, 2] (C)

IV. RATES AND CHARGES (Cont'd)

A. Rates and Charges (Cont'd)

1. User Network Interfaces (UNIs) Port with Access Line Connection (Cont'd)

	One-Year Rate	Two-Year Rate	Three-Year Rate	Five-Year Rate
d. OC12c, each				
SONET				
Full, Protected				
Tier 1 (0 to 5 Miles)	$23,668.00	$22,484.00	$20,118.00	$18,934.00
Tier 2 (Over 5 to 25 Miles)	27,844.00	26,452.00	23,668.00	22,275.00
Tier 3 (Over 25 to 50 Miles)	33,413.00	31,742.00	28,401.00	26,730.00
Full, Protected Diverse				
Tier 1 (0 to 5 Miles)	25,604.00	24,323.00	21,764.00	20,483.00
Tier 2 (Over 5 to 25 Miles)	30,121.00	28,615.00	25,604.00	24,098.00
Tier 3 (Over 25 to 50 Miles)	36,146.00	34,339.00	30,724.00	28,917.00
Incremental, Protected				
Tier 1 (0 to 5 Miles)	15,730.00	14,944.00	13,371.00	12,584.00
Tier 2 (Over 5 to 25 Miles)	18,505.00	17,580.00	15,730.00	14,805.00
Tier 3 (Over 25 to 50 Miles)	22,207.00	21,097.00	18,876.00	17,765.00
Incremental, Protected Diverse				
Tier 1 (0 to 5 Miles)	17,666.00	16,783.00	15,016.00	14,133.00
Tier 2 (Over 5 to 25 Miles)	20,783.00	19,744.00	17,666.00	16,627.00
Tier 3 (Over 25 to 50 Miles)	24,940.00	23,693.00	21,199.00	19,952.00

[1] Effective February 15, 2013, Asynchronous Transfer Mode (ATM) Service is grandfathered and is no longer available to new customers. Existing customers may maintain their services; however, upon expiration of the term commitment, the service will lapse into a one-year service arrangement. Moves or changes to subscribers' existing services are permissible; however, the customers' term commitment per circuit will not be extended.

[2] Effective May 31, 2022, Frontier will no longer support Moves, Adds or Changes nor new installations for [ATM] Service. Upon service term expiration, the service will transition to a Month-to-Month service arrangement. (N) (N)

ASYNCHRONOUS TRANSFER MODE (ATM) CELL RELAY SERVICE (CRS) [1, 2] (C)

IV. RATES AND CHARGES (Cont'd)

A. Rates and Charges (Cont'd)

2. UNI Inverse Multiplexing ATM (IMA)

	One-Year Rate	Two-Year Rate	Three-Year Rate	Five-Year Rate
a. First DS1, each (1.5 Mbps total bandwidth)				
Full				
Tier 1 (0 to 5 Miles)	$828.00	$788.00	$704.00	$663.00
Tier 2 (Over 5 to 25 Miles)	$828.00	$788.00	$704.00	$663.00
Tier 3 (Over 25 to 50 Miles)	$828.00	$788.00	$704.00	$663.00
b. Second DS1, each (3 Mbps total bandwidth)				
Full				
Tier 1 (0 to 5 Miles)	$787.00	747.00	684.00	644.00
Tier 2 (Over 5 to 25 Miles)	$787.00	747.00	684.00	644.00
Tier 3 (Over 25 to 50 Miles)	$787.00	747.00	684.00	644.00
c. Third DS1, each (4.5 Mbps total bandwidth)				
Full				
Tier 1 (0 to 5 Miles)	$757.00	718.00	642.00	605.00
Tier 2 (Over 5 to 25 Miles)	$757.00	718.00	642.00	605.00
Tier 3 (Over 25 to 50 Miles)	$757.00	718.00	642.00	605.00
d. Fourth DS1, each (6 Mbps total bandwidth)				
Full				
Tier 1 (0 to 5 Miles)	$757.00	718.00	642.00	605.00
Tier 2 (Over 5 to 25 Miles)	$757.00	718.00	642.00	605.00
Tier 3 (Over 25 to 50 Miles)	$757.00	718.00	642.00	605.00
e. Fifth DS1, each (7.5 Mbps total bandwidth)				
Full				
Tier 1 (0 to 5 Miles)	$ 757.00	718.00	642.00	605.00
Tier 2 (Over 5 to 25 Miles)	$ 757.00	718.00	642.00	605.00
Tier 3 (Over 25 to 50 Miles)	$ 757.00	718.00	642.00	605.00
f. Sixth DS1, each (9 Mbps total bandwidth)				
Full				
Tier 1 (0 to 5 Miles)	$757.00	718.00	642.00	605.00
Tier 2 (Over 5 to 25 Miles)	$757.00	718.00	642.00	605.00
Tier 3 (Over 25 to 50 Miles)	$757.00	718.00	642.00	605.00

[1] Effective February 15, 2013, Asynchronous Transfer Mode (ATM) Service is grandfathered and is no longer available to new customers. Existing customers may maintain their services; however, upon expiration of the term commitment, the service will lapse into a one-year service arrangement. Moves or changes to subscribers' existing services are permissible; however, the customers' term commitment per circuit will not be extended.

[2] Effective May 31, 2022, Frontier will no longer support Moves, Adds or Changes nor new installations for [ATM] Service. Upon service term expiration, the service will transition to a Month-to-Month service arrangement. (N) (N)

ASYNCHRONOUS TRANSFER MODE (ATM) CELL RELAY SERVICE (CRS) [1, 2] (C)

IV. RATES AND CHARGES (Cont'd)

A. Rates and Charges (Cont'd)

3. UNIs Port Only Connection

	One-Year Rate	Two-Year Rate	Three-Year Rate	Five-Year Rate
a. DS1, each				
Full	$ 420.00	$ 399.00	$ 358.00	$ 337.00
b. DS3, each				
Full	1,481.00	1,407.00	1,258.00	1,185.00
Incremental	712.00	677.00	605.00	570.00
c. OC3c, each				
Full	3,872.00	3,678.00	3,291.00	3,098.00
Incremental	1,139.00	1,081.00	968.00	911.00
d. OC12c, each				
Full	13,609.00	12,929.00	11,568.00	10,888.00
Incremental	4,270.00	4,057.00	3,630.00	3,417.00

1 Effective February 15, 2013, Asynchronous Transfer Mode (ATM) Service is grandfathered and is no longer available to new customers. Existing customers may maintain their services; however, upon expiration of the term commitment, the service will lapse into a one-year service arrangement. Moves or changes to subscribers' existing services are permissible; however, the customers' term commitment per circuit will not be extended.

2 Effective May 31, 2022, Frontier will no longer support Moves, Adds or Changes nor new installations for [ATM] Service. Upon service term expiration, the service will transition to a Month-to-Month service arrangement. (N) (N)

ASYNCHRONOUS TRANSFER MODE (ATM) CELL RELAY SERVICE (CRS) [2, 3] (C)

IV. RATES AND CHARGES (Cont'd)

A. Rates and Charges (Cont'd)

4. Permanent Virtual Circuits (PVCs), per order

	Nonrecurring Charge[1]
a. Virtual Channel Connections (VCCs)	
Constant Bit Rate (CBR)	$ 75.00
Variable Bit Rate real time (VBRrt)	75.00
Variable Bit Rate non-real time (VBRnrt)	75.00
Unspecified Bit Rate (UBR)	75.00
b. Virtual Path Connections (VPCs)	
Constant Bit Rate (CBR)	75.00
Variable Bit Rate real time (VBRrt)	75.00
Variable Bit Rate non-real time (VBRnrt)	75.00
Unspecified Bit Rate (UBR)	75.00

[1] Applies per order and in lieu of service charges found elsewhere in this product guide or other Company tariffs or product guides. If multiple UNIs are involved, a nonrecurring charge will apply to each UNI Port on which the virtual connections will reside. The nonrecurring charge does not apply when PVCs are installed at the same time as the respective UNIs.

[2] Effective February 15, 2013, Asynchronous Transfer Mode (ATM) Service is grandfathered and is no longer available to new customers. Existing customers may maintain their services; however, upon expiration of the term commitment, the service will lapse into a one-year service arrangement. Moves or changes to subscribers' existing services are permissible; however, the customers' term commitment per circuit will not be extended.

[3] Effective May 31, 2022, Frontier will no longer support Moves, Adds or Changes nor new installations for [ATM] Service. Upon service term expiration, the service will transition to a Month-to-Month service arrangement. (N) (N)

ASYNCHRONOUS TRANSFER MODE (ATM) CELL RELAY SERVICE (CRS) [3,4] (C)

IV. RATES AND CHARGES (Cont'd)

A. Rates and Charges (Cont'd)

5. Effective Bandwidth for Incremental UNIs

	Monthly Rate	Nonrecurring Charge
a. CBR or VBR PVC Bandwidth		
DS3, OC3c – 5 Mbps	$97.00	N/A
OC12c – 15 Mbps	242.00	N/A
b. CBR or VBR SVC Bandwidth		
DS3, OC3c – 5 Mbps	97.00	N/A
OC12c – 15 Mbps	242.00	N/A
c. UBR PVC and SVC Bandwidth, Bandwidth up to the UNI line rate		
DS3	484.00	N/A
OC3c	1,452.00	N/A
OC12c	4,840.00	N/A
6. Closed User Groups (CUG) [1], per order, per UNI		
a. Each CUG	N/A	$75.00
b. Each subsequent CUG member added to a CUG	N/A	75.00
7. Administrative Charge[2], per order	N/A	75.00

[1] Applies per order, per UNI, and in lieu of service charges found elsewhere in this product guide or other Company tariffs or product guides. The nonrecurring charge does not apply when a CUG is installed at the same time as the respective UNI.

[2] Applies per order, per UNI, and in lieu of service charges found elsewhere in this product guide or other Company tariffs or product guides. The nonrecurring charge does not apply for those items ordered on the same service order with the installation of a UNI.

[3] Effective February 15, 2013, Asynchronous Transfer Mode (ATM) Service is grandfathered and is no longer available to new customers. Existing customers may maintain their services; however, upon expiration of the term commitment, the service will lapse into a one-year service arrangement. Moves or changes to subscribers' existing services are permissible; however, the customers' term commitment per circuit will not be extended.

[4] Effective May 31, 2022, Frontier will no longer support Moves, Adds or Changes nor new installations for [ATM] Service. Upon service term expiration, the service will transition to a Month-to-Month service arrangement. (N) (N)

OBSOLETE SERVICES

The services contained in this section of the product guide are obsolete and are applicable to existing service only. No service contained herein is to be offered as new service, moved, changed nor added to unless expressly stated otherwise.

The Telephone Company will maintain all existing services outlined herein only as long as economically feasible. The customer will at that time be required to change to a like service, if available, at the rates specified in the applicable section of this IntraLATA Interexchange Services Product Guide.

MULTI-MEDIA DATA SERVICE (MMDS)

GENERAL

Multi-Media Data Service (MMDS) is a fiber optic-based group of high-speed data and video services for intra-exchange and interexchange use within a LATA. MMDS can be used to connect Ethernet (IEEE 802.3) and Token Ring (IEEE.802.5) local area networks (LANs), provide host remote IBM 3270 connections as well as electrical interfaces such as RS449/422 and V.35. MMDS video service is a single channel video for applications such as video teleconferencing. Specific distance limitations are identified within the individual service descriptions.

Customers with grandfathered MMDS rate elements may choose to make additions, deletions, or changes (upgrades) to service, for a period of one year from the expiration date of those contacts in effect on the date MMDS was approved as an obsolete service, subject to the following conditions:

Additions to the customer's existing service (such as adding more nodes for a new office(s)) will be allowed on the customer's existing network only.

Deletions to the customer's service will be subject to termination liability agreements per the original.

Moves - Moving a service (i.e. from location A to location B) will be considered a new service and will not be permitted under the grandfathered MMDS service.

Upgrades to grandfathered MMDS service will be considered a disconnect (deletion) of the grandfathered MMDS service and a reconnect (addition) of a new service. MMDS service will not be provisioned for new customers.

OBSOLETE SERVICES

MULTI-MEDIA DATA SERVICE (MMDS) (Cont'd)

DEFINITIONS

Customer Designated Location (CDL)
A location specified by the customer for purposes of terminating network service. A CDL may be the customer premises or a building where an off premises extension terminates.

Link
Transport over MMDS facilities between the Company's wire center and each customer designated location (CDL). Types of links in the provisioning of MMDS are the First Data Link, the Additional Data Link and the Video Link.

Network Interface
The point of electrical interconnection on the customer's premises between the Company's communications facilities and the customer's terminal equipment.

Network Node
The Company provided electronic equipment that converts the electrical signal delivered at the network interface to an optical signal.

ABBREVIATIONS

BNC - Bayonet-Neill Concelman

IEEE - Institute of Electrical and Electronic Engineers

NTSC - National Television Standards Committee

OBSOLETE SERVICES

MULTI-MEDIA DATA SERVICE (MMDS) (Cont'd)

SERVICE DESCRIPTIONS

Multi-Media Data Service (MMDS) will support the following types of data and video services:

Ethernet (IEEE 802.3)
Token Ring (IEEE 802.5)
IBM 3270 *
V.35
RS449/422
Non-Framed DS1
Single Channel Broad Band Video (NTSC/RS250B)

* Where MMDS provides IBM 3270 connectivity the service is limited to customer locations served by the same serving wire center.

MMDS Ethernet Service - A Local Area Network (LAN) to Local Area Network (LAN) transport service for interconnecting IEEE 802.3 LAN data rates up to 10 Mbps. The service is distance limited to a -31 dB system loss budget. This service may be point-to-point or multipoint (with a maximum of eight nodes).

MMDS Token Ring Service - A LAN-to-LAN transport service for interconnecting IEEE 802.5 LANs at data rates up to 4 Mbps or 16 Mbps. The service is distance limited to a -31 dB system loss budget. This service may be point-to-point or multipoint (a maximum of eight nodes).

MMDS IBM 3270 Host/Remote Service - A half-duplex, character oriented binary synchronous host to remote transport service offered in two configurations:

1) Support of BNC coaxial connections supporting up to two provided 3274 controllers,

2) Support of coaxial terminal adapter ports for connection to customer-provided 3299 type multiplexer.

Distance limitations for the IBM 3270:
- with IBM RPQ - 12,000 cable feet
- without IBM RPQ - 3,200 cable feet

MMDS V.35 Service - A wideband electrical signal for asynchronous transmission up to 256 Kbps.

MMDS RS-449/422 Service - An Electronic Industries Association recommended electrical interface for balanced circuits. The MMDS transport supports RS-449/422 at speeds from 20 Kbps to 9.4 Mbps.

OBSOLETE SERVICES

MULTI-MEDIA DATA SERVICE (MMDS) (Cont'd)

SERVICE DESCRIPTIONS (Cont'd)

MMDS NFDS-1 Service - A nonframed, DS1 point-to-point optical transmission at 1.544 Mbps. This service is provided without synchronization and not channelized by the Company

MMDS Video Service - The transport, over MMDS facilities, of single channel broad band video signals conforming to NTSC/RS25OB. The service supports a single video channel with two accompanying audio channels. MMDS Video is limited to point-to-point or point-to-multipoint service where each CDL is served from the same wire center.

RULES AND REGULATIONS

MMDS Service is only offered where fiber optic transmission facilities are available.

MMDS Service will only be used to interconnect customer locations within the same LATA.

MMDS providing IBM 3270 connectivity is limited to customer locations served by the same wire center.

The network demarcation point for MMDS is on the electrical side of the Company provided network interface on the customer premises. The customer is responsible for providing all facilities and cabling necessary to connect customer equipment to the network interface.

It is the customer's responsibility to ensure that the customer's terminal equipment provides industry standard electrical signals for MMDS transmission.

The First Data Link is required in order to provide MMDS to a CDL.

An Additional Data Link (ADL) is available to a CDL with at least one First Data Link. An ADL is required only when:

- an additional protocol is used, e.g., Ethernet and DS1; or
- the number of nodes exceeds eight.

A Video Link is only available to CDLs with at least one First Data Link.

OBSOLETE SERVICES

MULTI-MEDIA DATA SERVICE (MMDS) (Cont'd)

RULES AND REGULATIONS (Cont'd)

The First Data Link, Additional Data Link and Video Link at each CDL must be ordered for a term commitment period of one, three or five years. All term commitments are subject to a Termination Liability. See Termination Liability under General Rules and Regulations in the General Exchange Product Guide.

Prior to the expiration of a term commitment, if the customer converts to a term commitment with a longer period of time, the customer may receive credit for the elapsed time under the old term commitment toward the new term commitment period.

MMDS requires at least one First Data Link, in service, to a CDL. When the First Data Link is terminated, all Multi-Media Data Services will be terminated to the CDL. However, additional Links and Video Links may be terminated without terminating the First Data Link to the CDL.

In the initial order for MMDS at a CDL, the term commitment period for the Additional Data Links and/or Video Links cannot be longer than the term commitment period for the First Data Link.

If a customer subsequently orders an Additional Data Link and/or Video Link and the term commitment for the First Data Link has not expired, the following applies:

- the term commitment period selected for the Additional Data Link and/or Video Link must be equal to or shorter than the remaining contract period for the First Data Link, or

- The term commitment period for the First Data Link will be extended to be coterminous with the term commitment period selected for the Additional Data Link and/or Video Link. The monthly rate for the First Data Link for the new contract period shall be the corresponding monthly rate for the new contract period.

OBSOLETE SERVICES

MULTI-MEDIA DATA SERVICE (MMDS) (Cont'd)

RULES AND REGULATIONS (Cont'd)

An additional Data Link and/or Video Link can be provided after the expiration of the term commitment period for the First Data Link; however, the First Data Link will be placed under term commitment for a period equal to the term commitment period selected for the Additional Data Link and/or Video Link. The First Data Link monthly rate shall be the corresponding monthly rate for the new term commitment period.

See Termination Liability under General Rules and Regulations in the General Exchange Product Guide.

When MMDS is provided to two or more CDLs for the same customer and the customer terminates MMDS under term commitment at any CDL, the Termination Liability will apply on a CDL-by-CDL basis.

Nonrecurring Charges (NRCs) associated with MMDS may, at the option of the customer, be paid in three equal monthly installments. The customer should request this installment arrangement at the time a firm order is placed.

OBSOLETE SERVICES

MULTI-MEDIA DATA SERVICE (MMDS) (Cont'd)

RATES AND CHARGES

Rate Elements

First Data Link - Required to provide Multi-Media Data Service to each Customer Designated Location (CDL). The first data link ordered.

Additional Data Link - Subsequent data links ordered from the same CDL to the same serving wire center as the First Data Link.

Video Link - Supports a single video channel with two accompanying audio channels. MMDS Video Link limited to point-to-point or point-to-multipoint service where each CDL is served from the same wire center.

Interoffice Transport - Provides transmission facilities between serving wire centers associated with two or more CDLs. The monthly rate is applied to each airline mile, or fraction thereof, between the serving wire centers (1). If CDLs are served from one wire center, no Interoffice Transport charges apply.

Transport Termination - Provides the equipment and arrangements necessary to terminate the interoffice transport facility at a serving wire center. One Transport Termination charge applies for the termination of each Frontier end of the interoffice transport facility. If CDLs are served from one wire center, no Transport Termination charges are applicable.

(1) To determine interoffice airline mileage see Frontier Texas Facilities for State Access Tariff Section 4.5.2(N)(2)(a).

OBSOLETE SERVICES

MULTI-MEDIA DATA SERVICE (MMDS) (Cont'd)

RATES AND CHARGES (Cont'd)

	Nonrecurring Charge (1)	Monthly Rate
MMDS First Data Link		
12 Month Term Commitment	$3,300.00	$750.00
36 Month Term Commitment	3,300.00	700.00
60 Month Term Commitment	3,300.00	650.00
MMDS Additional Data Link		
12 Month Term Commitment	200.00	115.00
36 Month Term Commitment	200.00	100.00
60 Month Term Commitment	200.00	90.00
MMDS Video Link		
12 Month Term Commitment	3,000.00	415.00
36 Month Term Commitment	3,000.00	400.00
60 Month Term Commitment	3,000.00	380.00
Interoffice Transport		
(Per Airline Mile)	.00	10.00
Termination Charge		
(Per Termination)	300.00	100.00

(1) In addition to appropriate Service Order Charge in the General Exchange Product Guide.