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**23. Multi-Service Optical Network (MON) Ring Service (cont'd)**

23.1 General Description

(A) Basic Service Description

Effective January 23, 2013, new Multi-service Optical Network (MON) Ring Service term plans are no longer available. Following the expiration of their existing term plans, MON Ring Service Customers may continue to purchase service on a month-to-month basis. Customers will be permitted to modify their existing service and will be able to add new circuits to their existing service but will not be permitted to add new nodes in new locations. Any such new circuits will be subject to, and conterminous with, the Customer's existing term payment plan or term agreement for the service to which they are added.

Multi-service Optical Network (MON) Ring Service is a Special Access Service that provides high volume optical transport utilizing multiplexing technology in a dedicated ring configuration. Multiple data signals are transmitted over the same fiber-optic cable at the same time, using different wavelengths of light, in order to increase the amount of information that can be transferred. Each wavelength represents a transmission channel in the MON Ring system and is protocol independent of every other channel in the system.

MON Ring Service allows customers to combine their multiple data signals so they may be amplified and transported over one network. MON Ring Service provides dedicated capacity over a single pair of fiber in two directions that increases capacity without limiting customer-required data interfaces.

The following regulations will apply to MON Ring Service:

- (1) MON Ring Service is only available under a three (3) or five (5) year Term Payment Plan (TPP) for which rates and charges are applicable. When a service is discontinued prior to the expiration of the minimum period, termination charges are applicable for the remaining portion of the minimum period.
- (2) Prior to confirming an order for service, the Telephone Company will provide a proposed route diagram to the customer. Installation will not begin until the customer has accepted the proposed routing by the Telephone Company.

## 23. Multi-Service Optical Network (MON) Ring Service (cont'd)

### 23.1 General Description (cont'd)

#### (B) Service Provisioning

##### (1) Manner of Provisioning

MON Ring Service will be offered in two configurations. Customers can purchase MON Ring with growth capacity up to 16-wavelengths or up to 32-wavelengths. The 32-wavelength systems may be provisioned as two 16-wavelength systems sharing common fiber and common equipment. Conversions from 16-wavelength MON Rings to 32-wavelength MON Rings are not available.

Customer provided equipment (CPE) must deliver the data signals for the MON Ring Service transport within the technical specifications for the subscribed data service. Technical specifications can be found in the following Technical Reference Publications:

AM TR-NIS-000100, Ameritech LAN Interconnect Service-Token Ring Interface Specifications

AM TR-NIS-000104, Ameritech LAN Interconnect Service –CSMA CD Interface Specifications

AM-TR-NIS-000111, OC-3, OC-12, and OC-48 Service Interface Specifications

AM-TR-TMO-000101, Ameritech Digital Service Transmission Parameters

AM-TR-TMO-000080, Ameritech Service's Network Channel & Network Channel Interface Codes

AM-TR-NIS-000096, Ameritech Technical Interfaces Specifications

AM-TR-NIS-000107, (ESCON<sup>TM/1</sup>)

IBM SA22-7202-XX, IBM Documentation (ESCON<sup>TM/1</sup>)

IBM SA22-0394-XX

ANSI X3.T9.3, Fiber Channel (also includes FICON<sup>TM/1</sup> and ISC<sup>TM/1</sup>)

ANSI/IEEE 802.3, Fast Ethernet

IEEE 802.3x and z, Gigabit Ethernet

IEEE 802.3ae

ANSI/SMPTE 259M, D1 Video

MON Ring Service provides physical layer transport only. Telephone Company assumes no responsibility for the signals generated by the CPE, or address signaling to the extent the CPE performs addressing. Error detection and correction of data generated by the CPE are the customer's responsibility.

/1/ ESCON<sup>TM</sup>, ETR/CLO<sup>TM</sup>, FICON<sup>TM</sup>, ISC-1<sup>TM</sup>, ISC-3<sup>TM</sup> and GDPST<sup>TM</sup> are registered trademarks of the International Business Machines (IBM) Corporation, Armonk, NY 10504.

**23. Multi-Service Optical Network (MON) Ring Service (cont'd)**

23.1 General Description (cont'd)

(B) Service Provisioning (cont'd)

(2) Limitations

- (a) Optical amplifiers and/or regenerators may have to be added to a MON Ring Service subsequent to the initial installation.
- (b) When any additional services are added, such installations may cause a service interruption to existing unprotected channels, or a protection switch on protected channels.
- (c) Services with time-delay sensitive protocols have facility length limitations and may affect the design/availability of MON Ring Service. The Telephone Company will work cooperatively with the customer to determine if the desired services can operate between the customers designated premises. These services will not be available on MON Rings nor between nodes where facility length limitations exceed the service specifications described in Sections 23.3(B) (1) & (2).
- (d) Neither electrical interfaces nor optical multiplexing are available with MON Ring Service.
- (e) Conversions from any other lower speed services to MON Ring Service are not available.
- (f) Channel protection may not be available for all interface types.
- (g) A protective channel provides protection for a single channel toward the network. It does not protect the channel against failure towards the customer interface. Protection reduces the maximum individual channel capacity of the system.
- (h) OC-12/-OC-12c, Gigabit Ethernet, Fibre Channel and FICON™ at the 1.0625 Gbps speed may be ordered either on the MON Ring, or as a riding circuit on a Sub-Rate System. Fibre Channel and FICON™ at 2.125 Gbps rates can only be ordered on the MON Ring, and are not available on a Sub-Rate System. OC-12, Gigabit Ethernet, Fibre Channel and FICON™ at 1.0625 Gbps rates when ordered on a Sub-Rate System, are represented by different rate elements than those services ordered directly on the MON Ring.
- (i) The customer must first order the MON Ring Transport System followed by the MON Ring Channels. When ordering certain port interfaces requiring a Sub-Rate System, the customer must first order a MON Ring Channel Sub-Rate System over which these services will be assigned. When Riding Services are ordered on a Sub-Rate System, they are represented by different rate elements than those services ordered directly on the MON Ring.

**23. Multi-Service Optical Network (MON) Ring Service (cont'd)**

23.1 General Description (cont'd)

(B) Service Provisioning (cont'd)

(3) Allowance for Service Interruptions

An interruption of service will start when an inoperative service is reported to the Telephone Company and end when the service is operative. In any month, as a result of an interruption, the total credit per rate element of the interrupted service may not exceed 100 percent of the monthly charge for that particular rate element as described in Section 2.4.4.

Any protected service interruptions greater than 2 consecutive seconds as a result of a failure on the protected portion of the circuit will result in a credit equal to one month's bill for the individual port-to-port connection involved<sup>/1/</sup>. If the interruption occurs on an unprotected portion of the circuit, normal terms and conditions for credit allowances will apply as stated in 2.4.4. Any protected service interruptions greater than 10 consecutive seconds as a result of a failure on the protected portion of the circuit will result in a credit equal to one month's bill for the individual port-to-port connection involved<sup>/2/</sup>.

/1/ This regulation does not apply to customers purchasing this service on or after 09/09/06.

/2/ This regulation does not apply to customers purchasing this service before 09/09/06.

## 23. Multi-Service Optical Network (MON) Ring Service (cont'd)

### 23.1 General Description (cont'd)

**(B) Service Provisioning (cont'd)**

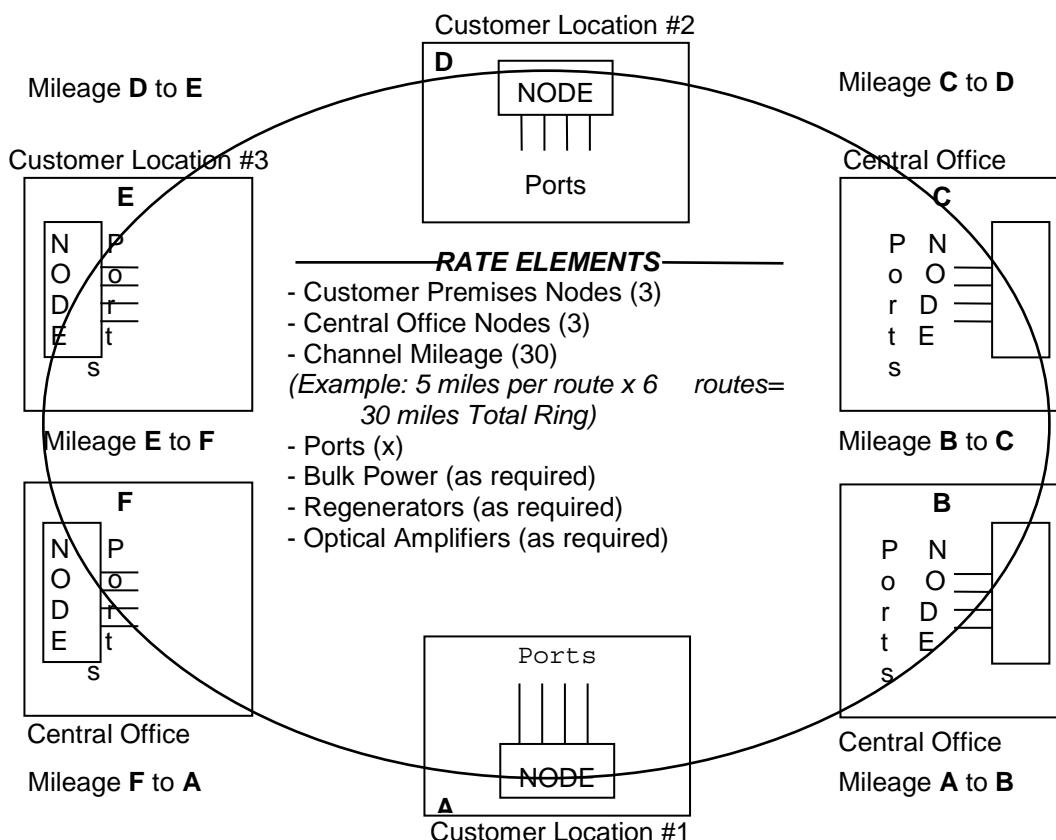
#### (4) MON Ring Configuration

MON Ring Service is available in different ring configurations utilizing central office nodes and customer premises nodes. The total number of circuits and total usable bandwidth to the customer depends upon the mix of services ordered and the specific traffic patterns of the customer. The Telephone Company will determine the appropriate wavelength assignment and the design of the MON Ring.

The minimum configuration would be two nodes either at a serving wire center or at a customer premises site. If the nodes are not in a serving wire center, a central office management site for monitoring is required. An optical amplifier located at a serving wire center can be used as a monitoring site.

A combination of these configurations may be used in a network design depending on the customer's traffic pattern.

## Diagram of Mon Ring



**23. Multi-Service Optical Network (MON) Ring Service (cont'd)**

23.1 General Description (cont'd)

(C) Responsibility of The Telephone Company

The Telephone Company will provision and maintain MON Ring Service for the customer up to and including the Network Interface (NI).

(D) Responsibility of Customer

The customer is responsible for providing the compatible CPE to be used for the connection to the MON Ring Service.

(E) Service Rearrangements

Service rearrangements are provisioning changes to existing (installed) services which do not result in either a change in the minimum period requirements or a change in the physical location of the point of termination at a customer premises, and will be charged as follows:

- (1) If changing the customer of record, the Administrative Charge will apply. For the changes of customer of record to be treated as a service rearrangement, the new customer must assume liability for both current and prior charges for the service.
- (2) For all other changes not requiring physical work at the central office, or customer premises, including a change in the customer assigned circuit identification or billing account number (when initiated by the customer), the Administrative Charge will apply.
- (3) For all other service rearrangements requiring physical work to be performed, the Administrative Charge will apply. Additionally, one Design and Central Office Connection Charge and one Customer Connection Charge per customer premises node will apply.

**23. Multi-Service Optical Network (MON) Ring Service (cont'd)****23.2 Route Diversity**

MON Ring Service is configured with diversely routed fiber whenever possible. Unprotected channels will be lost in the event of a fiber path failure on which the circuit is assigned. Equipment interfaces towards the customer are not protected.

Routing of fiber may be diversified from the customer premises to their serving wire center or alternate serving wire center as determined by the Telephone Company, and where facilities are available, to ensure that loop fibers follow separate paths to the serving wire center or alternate serving wire center. In addition, IOF (interoffice facility) fiber paths may be diversified to ensure that at any serving wire center drop node, the fibers do not egress and ingress at the same location. In cases where the serving wire center does not have multiple entrance fiber facilities, the section of the fiber from the manhole closest to the serving wire center will be routed within the same duct structure.

At the customer's request, additional protection to the customer premises nodes can be provided via dual entrance facilities. This special request will cause the customer to incur special construction cost. Without this special request, diverse fiber is provided to the manhole closest to the customer premises. The customer or building owner is responsible for providing the conduit.

In the case where dual entrance facilities are not established at the customer premises, collapsed facilities from the customer premises to the building equipment location are not diverse.

**23.3 Rate Regulations****(A) Rate Elements**

There are nine basic rate elements which apply to the MON Ring Service:

**(1) Nonrecurring Charges**

These are one-time charges that apply for specific work activities (i.e., installation of new service, moves, and rearrangements of installed services). There are three different nonrecurring charges:

- (a) Administrative Charge - applies any time a customer initiates an order for service. This charge applies once per customer order.
- (b) Design and Central Office Connection Charge - applies once for the initial MON Ring installation and applies once for each circuit ordered on the MON Ring Service.
- (c) Customer Connection Charge – applies to establish the MON Ring network and is charged per node. Subsequent installation charges apply to each subsequent shelf installed after the MON Ring network is established.

**23. Multi-Service Optical Network (MON) Ring Service (cont'd)**

23.3 Rate Regulations (cont'd)

(A) Rate Elements (cont'd)

(2) Customer Premises Node

Provides for the termination of service at the customer's premises and presents the various selected ports to the customer. Applies per customer designated premises, per first shelf and subsequent shelves.

(3) Central Office Node

Provides for the termination of service at a Telephone Company serving wire center. Applies per first shelf and subsequent shelves.

(4) Channel Mileage

Provides for the transmission facilities between the serving wire centers associated with the customer designated premises. The mileage measurement is developed utilizing the V&H coordinate method as set forth in the National Exchange Carrier Association, Inc. (NECA) Wire Center Information Tariff, F.C.C. No. 4. A one-mile minimum will be billed between nodes. A two-node ring configuration has a two mile minimum, one mile from the central office node to the customer premises node, and one mile from the customer premises node to the central office node.

(5) Optical Amplifier

Provides for an optical signal boost and applies when the distance between nodes exceeds the transmission loss parameters (link loss specific). Optical amplifiers are located at the customer premises node, a central office node, or a serving wire center. Each amplifier provides amplification for up to 16 channels per location (one amplifier per C or L band). Available where facilities and equipment permit <sup>/1/</sup>.

(6) Regenerator

Provides for re-timing, re-shaping, and regeneration when the degradation of the signal exceeds the dispersion and/or optical amplifier noise limits. Applies on a per shelf basis for up to 2.5 Gbps services and on a per circuit basis for up to 10 Gbps service.

(7) Bulk Power

Provides for customer premises node power, which will be required if the customer's power source is AC. Applies once per 4 shelves, with the first shelf and fifth subsequent shelf at each applicable customer premises node.

/1/ This regulation only applies to customers purchasing this service on or after 09/09/06.

**23. Multi-Service Optical Network (MON) Ring Service (cont'd)**

23.3 Rate Regulations (cont'd)

(A) Rate Elements (cont'd)

(8) Port

Provides for the channel interface at any node location for each unprotected or protected channel. Applies per port/per circuit terminating location. Charges will apply at the lower speed circuit level.

(9) Sub-Rate System

Allows for multiple ports, also called riding circuits, on a single bandwidth.

(B) MON Ring Connection Capacity

MON Ring Service offers the following port interfaces:

(1) IBM Protocols:

ESCON<sup>TM/1</sup>(200 Mbps) – Enterprise Systems Connection. An IBM duplex optical connection used for computer-to-computer data exchange. ESCON<sup>TM</sup> is limited to a maximum distance of 43 km and actual data throughput is distance sensitive. (Offered as a riding circuit where facilities and equipment permit.)

ETR/CLO<sup>TM/1</sup>(8 Mbps – Manchester Encoded) – External Timing References/Control Link Oscillator. This protocol is used for IBM GDPS<sup>TM</sup> architecture for multiple-location host processors. ETR/CLO<sup>TM</sup> is limited to a maximum distance of 40 km.

FICON<sup>TM/1</sup>(1.0625 and 2.125 Gbps) – A higher-speed evolution of ESCON<sup>TM</sup>, enabling 1 Gbps connectivity among mainframes, storage devices and peripherals. FICON<sup>TM</sup> is limited to a maximum distance of 100 km and actual data throughput is distance sensitive. (Offered as a riding circuit where facilities and equipment permit.)

ISC-1<sup>TM/1</sup>(1.0625 Gbps) – Inter-System Coupling. This protocol is used with IBM GDPS<sup>TM/1</sup> architecture for multiple-location host processors. ISC-1<sup>TM</sup> is limited to a maximum distance of 40 km.

ISC-3<sup>TM/1</sup> - ISC-3 links have a peak data rate of 2.125 Gbps and can interconnect IBM<sup>TM</sup> eServer z900 systems for distances up to 10 km.

/1/ ESCON<sup>TM</sup>, ETR/CLO<sup>TM</sup>, FICON<sup>TM</sup>, ISC-1<sup>TM</sup>, ISC-3<sup>TM</sup> and GDPS<sup>TM</sup> are registered trademarks of the International Business Machines (IBM) Corporation, Armonk, NY 10504.

**23. Multi-Service Optical Network (MON) Ring Service (cont'd)**

23.3 Rate Regulations (cont'd)

(B) MON Ring Connection Capacity (cont'd)

(2) Other Protocols:

Fiber Channel (1.0625 and 2.125 Gbps) – an industry standard protocol used to interconnect Storage Area Networks (SANs). Fiber Channel is limited to a maximum distance of 100 km and actual throughput is distance sensitive. (Offered as a riding circuit where facilities and equipment permit.)

Fast Ethernet – a version of Ethernet that allows data transmission rates of 100 Mbps. (Offered as a riding circuit where facilities and equipment permit.)

Gigabit Ethernet<sup>/1</sup> – a version of Ethernet that allows data transmission rates of 1 Gbps. (Offered as a riding circuit where facilities and equipment permit.)

10 Gigabit Ethernet (WAN-PHY)<sup>/1</sup> – a version of Ethernet that allows data transmission rates of 9.953 Gbps with a WAN-PHY only interface.

10 Gigabit Ethernet (LAN-PHY)<sup>/1</sup> - a version of Ethernet that allows data transmission rates of 10.3125 Gbps with a LAN-PHY only interface.

D1 Video – uncompressed digital video signal operating at 270 Mbps. (Offered as a riding circuit where facilities and equipment permit.)

Gigabit Ethernet/Fibre Channel/FICON™ Sub-Rate System (2:1) - provides a multiplexing system which allows customers to put up to two Gigabit Ethernet (GigE) Channels or up to two 1.0625 Gbps Fibre Channels or up to two 1.0625 Gbps FICON™ Channels, or any combination thereof, totaling two channels on the Sub-Rate System. Gigabit Ethernet, 1.0625 Gbps Fibre Channel and 1.0625 Gbps FICON™ protocols are defined in 12.2 (A), preceding. Fibre Channel and FICON™ at 2.125 Gbps rates cannot be placed on this sub-rate system.

ESCON™ Sub-Rate System (8:1) - provides a multiplexing system which allows customers to put up to eight ESCON™ Channels (no other protocol) on one port card, (ESCON™ protocol is defined in 12.2 (A), preceding) and is available where facilities and equipment permit.

/1/ These port interfaces are available at both the customer premises nodes and the central office node. All other port interfaces are available only at the customer premises node.

**23. Multi-Service Optical Network (MON) Ring Service (Cont'd)**

23.3 Rate Regulations (Cont'd)

(B) MON Ring Connection Capacity (Cont'd)

(2) Other Protocols: (Cont'd)

SONET OC-3/OC-3c/OC-12/OC-12c Sub-Rate System (4:1) – provides a multiplexing system which allows customers to put up to either four OC-3/OC-3c signals and/or four OC-12/OC-12c signals or combinations thereof on one card. This sub-rate multiplexing system will have independent timing which allows multiple OC-3/OC-3c services and/or OC-12/OC-12c services on one Sub-Rate card, and is available where facilities and equipment permit.

SONET OC-3/OC-3c\* - provides a fiber-based 155.52 Mbps synchronous optical full duplex data transmission capability. (Offered as a riding circuit and where facilities and equipment permit.)

SONET OC-12/OC-12c\* - provides a fiber-based 622.08 Mbps synchronous optical full duplex data transmission capability.

SONET OC-48/OC-48c\* - provides a fiber-based 2488.32 Mbps synchronous optical full duplex data transmission capability.

SONET OC-192/OC-192c\* - provides a fiber-based 9953.28 Mbps synchronous optical full duplex data transmission capability.

Digital Video Broadcasting (DVB-ASI) – provides an 1310 nm optical interface at 270 Mbps. (Offered as a riding circuit and where facilities and equipment permit.)

Sub-Rate System - provides a multiplexing system operating at 1.25 Gbps with 4 ports. Applicable to ESCON™, Fast Ethernet, DVB-ASI, D1 Video and OC-3/OC-3c port interfaces. \*Sub-Rate multiplexing is offered at the serving wire-center only for OC-3/OC-3c. (Available where facilities and equipment permit.)

SONET OC-48/OC-48c\* Sub-Rate System 4:1 – provides a multiplexing system which allows customers to put up to four (4) OC-48 signals on one port card. (Available where facilities and equipment permit.)

\* These port interfaces are available at both the customer premises node and the central office node. All other port interfaces are available only at the customer premises node.

**23. Multi-Service Optical Network (MON) Ring Service (cont'd)**

23.3 Rate Regulations (cont'd)

(C) Term Pricing Plan

(1) General Description

MON Ring Service Term Pricing Plan (TPP) provides the customer with discounted tariff rates for a three or five year term period. During the length of the selected TPP, monthly rates for service ordered under the plan will automatically change (increase or decrease), as Telephone Company initiated rate changes become effective. However, under no circumstances will any rate change cause the monthly rate for the service to exceed the rate that was in effect at the beginning of the selected TPP. The Telephone Company will notify customers participating in a TPP when monthly rates are increased or decreased. When customer's term agreement expires, if customer does not subscribe to a new service or choose to disconnect service, the customer's service will automatically convert to monthly extension rates.

(2) TPP Renegotiations

The customer may choose to terminate an existing TPP at any time prior to the end of the three or five year term period and renegotiate a new TPP without termination liability provided the new TPP meets the following requirements:

- (a) The minimum period for the new TPP must be equal to or of greater duration than the remaining period of the existing TPP.
- (b) The renegotiated TPP will be based on the current rates.

(3) Additions

Any MON Ring rate elements (as shown in Section 23.4) added to the existing service configuration after the expiration of 25 months of a 36 month TPP term, or 42 months of a 60-month TPP term, will be billed under the tariffed monthly extension rates.

**23. Multi-Service Optical Network (MON) Ring Service (cont'd)**

23.3 Rate Regulations (cont'd)

(C) Term Pricing Plan (cont'd)

(4) Termination of Service

Customer requesting termination of service prior to the expiration date of the TPP for any reason will be liable for a termination charge, which is calculated as follows:

Billing Period	Termination Percentage		
3 Year		75%	
5 Year		60%	
	(Monthly Recurring Rates)	X	(Months Remaining in Billing)
		X	(Termination Percentage)

Example:

A MON Ring Customer with \$50,000 monthly rate terminates service after 2 years with 1 year (12 months) remaining in a 3 year TPP. The termination liability would be calculated as:  $\$50,000 \times 12 \times .75 = \$450,000.00$

(5) Moves

If during the duration of the TPP, the customer wishes to rearrange or move a customer premises node, a termination charge will apply.

**23. Multi-Service Optical Network (MON) Ring Service (cont'd)**

23.4 Rates and Charges

(A) Nonrecurring Charges

	<u>USOC</u>	<u>Nonrecurring Charge</u>
(1) Administrative Charge - per customer order	ORCMX	\$125.00
(2) Design and Central Office Connection Charge - per network and per riding circuit	NRBCL	600.00
(3) Customer Connection Charge (Service Establishment) - per node	NRBBL	7,500.00
(4) Customer Connection Charge (Subsequent Installation) - per subsequent shelf	NHCNL	1,000.00

**23. Multi-Service Optical Network (MON) Ring Service (cont'd)**23.4 Rates and Charges (cont'd)(B) Recurring Charges

	USOC	Monthly Rates		Monthly Extension
		3 Year	5 Year	
(1) Customer Premises Node (includes first shelf)	F2ND1	\$ 7,800.00	\$ 6,240.00	\$10,920.00
(2) Customer Premises Node - per subsequent shelf	F2NDS	5,850.00	4,680.00	8,190.00
(3) Central Office Node (includes first shelf)	F2NC1	7,800.00	6,240.00	10,920.00
(4) Central Office Node - per subsequent shelf	F2NCS	5,850.00	4,680.00	8,190.00
(5) Channel Mileage - per V-H mile or fraction thereof (2 mile min.)	1L5XX	325.00	260.00	455.00
(6) Optical Amplifier - C band (per location)	67QXX	5,400.00	3,600.00	7,600.00
- L <sup>1/</sup> band (per location)	67QSX	5,400.00	3,600.00	7,600.00
(7) Regenerator – (as required) - up to 2.5 Gbps (per shelf)	V8RXX	7,500.00	5,000.00	10,500.00
- up to 10 Gbps (per circuit)	V8R2C	15,000.00	10,000.00	21,000.00
(8) Bulk Power - per first shelf, for shelves 1 thru 4	CBVDX	2,000.00	1,600.00	2,600.00
(9) Bulk Power - per fifth subsequent shelf for shelves 5 thru 8	CBVDS	1,600.00	1,300.00	2,100.00

/1/ Available only where facilities and equipment permit. This regulation only applies to customers purchasing this service on or after 09/09/06.

**23. Multi-Service Optical Network (MON) Ring Service (cont'd)****23.4 Rates and Charges (cont'd)****(C) Ports**

- per port/per circuit terminating location

	USOC	Monthly Rates		Monthly Extension
		3 Year	5 Year	
(1) ETR/CLO <sup>TM/1</sup> /				
- unprotected channel	POYKW	\$975.00	\$750.00	\$1,400.00
(2) FICON <sup>TM/1</sup> / (1.0625 Gbps)				
- unprotected channel	POYMW	975.00	750.00	1,400.00
- protected channel	POYMP	1,950.00	1,500.00	2,800.00
(3) FICON <sup>TM/1</sup> / (2.125 Gbps)				
- unprotected channel	POYWW	1,700.00	1,300.00	2,400.00
- protected channel	POYWP	3,400.00	2,600.00	4,800.00
(4) ISC-1 <sup>TM/1</sup> /				
- unprotected channel	POYJW	1,800.00	1,250.00	2,500.00
- protected channel	POYJP	3,600.00	2,500.00	5,000.00
(5) ISC-3 <sup>TM/1</sup> /				
- unprotected channel	POY9W	3,750.00	2,500.00	5,000.00
- protected channel	POY9P	7,500.00	5,000.00	10,000.00
(6) Fiber Channel (1.0625 Gbps)				
- unprotected channel	POYNW	1,200.00	900.00	1,700.00
- protected channel	POYNP	2,400.00	1,800.00	3,400.00

/1/ ESCON<sup>TM</sup>, ETR/CLO<sup>TM</sup>, FICON<sup>TM</sup>, ISC-1<sup>TM</sup>, ISC-3<sup>TM</sup> and GDPS<sup>TM</sup> are registered trademarks of the International Business Machines (IBM) Corporation, Armonk, NY 10504.

**23. Multi-Service Optical Network (MON) Ring Service (cont'd)**23.4 Rates and Charges (Cont'd)(C) Ports (Cont'd)

- per port/per circuit terminating location

	USOC	Monthly Rates		Monthly Extension
		3 Year	5 Year	
(7) Fiber Channel (2.125 Gbps)				
- unprotected channel	POYYW	\$1,700.00	\$1,300.00	\$2,400.00
- protected channel	POYYP	3,400.00	2,600.00	4,800.00
(8) Gigabit Ethernet				
- unprotected channel	POYLPW	1,200.00	900.00	1,700.00
- protected channel	POYLP	2,400.00	1,800.00	3,400.00
(9) 10 Gigabit Ethernet (WAN-PHY)				
- unprotected channel	POYTWP	15,000.00	12,500.00	21,000.00
- protected channel	POYTP	20,000.00	16,700.00	28,000.00
(10) 10 Gigabit Ethernet (LAN-PHY)				
- unprotected channel	POYUW	15,375.00	12,815.00	21,525.00
- protected channel	POYUP	20,500.00	17,120.00	28,700.00
(11) SONET OC-12/OC-12c				
- unprotected channel	POYFW	1,300.00	1,000.00	1,900.00
- protect channel	POYFP	2,600.00	2,000.00	3,700.00
(12) SONET OC-48/OC-48c				
- unprotected channel	POYGW	4,400.00	3,700.00	6,000.00
- protected channel	POYGP	6,600.00	5,560.00	9,000.00
(13) SONET OC-192/OC-192c				
- unprotected channel	POYOW	15,000.00	12,500.00	21,000.00
- protected channel	POYOP	20,000.00	16,700.00	28,000.00

**23. Multi-Service Optical Network (MON) Ring Service (cont'd)****23.4 Rates and Charges (Cont'd)****(C) Ports (Cont'd)**

- per port/per circuit terminating location (cont'd)

	USOC	Monthly Rates		Monthly Extension
		3 Year	5 Year	
(14) Sub-Rate System <sup>/4/</sup> - unprotected channel - protected channel	POYSW POYSP	\$1,300.00 2,600.00	\$1,000.00 2,000.00	\$1,900.00 3,700.00
(15) ESCON™ Riding Circuit <sup>/1,2,4/</sup> - unprotected channel - protected channel	POYHW POYHP	100.00 100.00	100.00 100.00	150.00 150.00
(16) Fast Ethernet Riding Circuit <sup>/2,4/</sup> - unprotected channel - protected channel	POYCW POYCP	325.00 500.00	250.00 400.00	500.00 800.00
(17) D1 Video Riding Circuit <sup>/2,4/</sup> - unprotected channel - protected channel	POYVW POYVP	100.00 100.00	100.00 100.00	150.00 150.00
(18) DVB-ASI Riding Circuit <sup>/4/</sup> - unprotected channel - protected channel	PWY5W PWY5P	100.00 100.00	100.00 100.00	150.00 150.00
(19) SONET OC-3/OC-3c Riding Circuit <sup>/3,4/</sup> - unprotected channel - protected channel	POYEW POYEP	100.00 100.00	100.00 100.00	150.00 150.00
(20) GigE/FC/FICON™/Sub-Rate System - unprotected channel - protected channel	POY1W POY1P	875.00 1,750.00	700.00 1,400.00	1,140.00 2,280.00
(21) GigE Riding Circuit <sup>/5/</sup> - unprotected channel - protected channel	POY4W POY4P	500.00 1,000.00	400.00 800.00	650.00 1,300.00
(22) Fibre Channel Riding Circuit <sup>/5/</sup> - unprotected channel - protected channel	POY6W POY6P	500.00 1,000.00	400.00 800.00	650.00 1,300.00

/1/ ESCON™, ETR/CLO™, FICON™, ISC-1™, ISC-3 and GDPS™ are registered trademarks of the International Business Machines (IBM) Corporation, Armonk, NY 10504.

/2/ Available only when ordered with Sub-Rate System or ESCON™ Sub-Rate System.

/3/ Available only when ordered with Sub-Rate System or OC-3/OC-12 Sub-Rate System.

/4/ Available where facilities and equipment permit. This regulation only applies to customers purchasing this service on or after 09/09/06.

/5/ Available only when ordered with GigE/FC/FICON™/ Sub-Rate System.

**23. Multi-Service Optical Network (MON) Ring Service (cont'd)**23.4 Rates and Charges (Cont'd)(C) Ports (Cont'd)

- per port/per circuit terminating location (cont'd)

	USOC	Monthly Rates		Monthly Extension
		3 Year	5 Year	
(23) FICON <sup>TM/1,2/</sup> Riding Circuit - unprotected channel - protected channel	POY7W POY7P	\$400.00 800.00	\$320.00 640.00	\$460.00 960.00
(24) ESCON <sup>TM/1,4/</sup> Sub-Rate System - unprotected channel - protected channel	POY2W POY2P	1,500.00 3,000.00	1,125.00 2,250.00	1,950.00 3,900.00
(25) OC-3/OC-3c and OC-12/OC-12c <sup>4/</sup> - unprotected channel - protected channel	POY3W POY3P	1,000.00 2,000.00	750.00 1,500.00	1,300.00 2,600.00
(26) OC-12/OC-12c <sup>3/</sup> Riding Circuit - unprotected channel - protected channel	POY5W POY5P	500.00 1,000.00	375.00 750.00	700.00 1,400.00
(27) DVB-ASI - unprotected channel - protected channel	POY8W POY8P	2,100.00 4,200.00	1,650.00 3,300.00	3,075.00 5,775.00
(28) ESCON <sup>TM/4/</sup> - unprotected channel - protected channel	PWY1W PWY1P	1,300.00 2,600.00	1,000.00 2,000.00	1,900.00 3,700.00
(29) Fast Ethernet <sup>4/</sup> - unprotected channel - protected channel	PWY2W PWY2P	1,300.00 2,600.00	1,000.00 2,000.00	1,900.00 3,700.00
(30) D1 Video - unprotected channel - protected channel	PWY3W PWY3P	1,300.00 2,600.00	1,000.00 2,000.00	1,900.00 3,700.00

/1/ ESCON<sup>TM</sup>, ETR/CLO<sup>TM</sup>, FICON<sup>TM</sup>, ISC-1<sup>TM</sup>, ISC-3<sup>TM</sup> and GDPS<sup>TM</sup> are registered trademarks of the International Business Machines (IBM) Corporation, Armonk, NY 10504.

/2/ Available only when ordered with GigE/FC/FICON<sup>TM/1/</sup> Sub-Rate System.

/3/ Available only when ordered with Sub-Rate System or OC-3/OC-12 Sub-Rate System.

/4/ Available only where facilities and equipment permit. This regulation only applies to customers purchasing this service on or after 09/09/06.

/5/ Available only when ordered with an OC-48 Sub-Rate System.

**23. Multi-Service Optical Network (MON) Ring Service (cont'd)**23.4 Rates and Charges (Cont'd)(C) Ports (Cont'd)

- per port/per circuit terminating location (cont'd)

	USOC	Monthly Rates		Monthly Extension
		3 Year	5 Year	
(31) SONET OC-3/OC-3c <sup>/1</sup>				
- unprotected channel	PWY4W	\$1,300.00	\$1,000.00	\$1,900.00
- protected channel	PWY4P	2,600.00	2,000.00	3,700.00
(32) OC-48/OC-48c SONET Sub-Rate System 4:1 <sup>/1</sup>				
- unprotected channel	POYRW	3,500.00	2,750.00	4,250.00
- protected channel	POYRP	7,000.00	5,500.00	8,500.00
(33) SONET OC-48 <sup>/1</sup> Riding Circuit				
- unprotected channel	POYZW	1,900.00	1,200.00	2,800.00
- protected channel	POYZP	3,800.00	2,400.00	5,600.00

/1/ Available only where facilities and equipment permit. This regulation only applies to customers purchasing this service on or after 09/09/06.