

**COMCAST ENTERPRISE SERVICES  
PRODUCT-SPECIFIC ATTACHMENT  
INTERSTATE WAVELENGTH SERVICES**

**ATTACHMENT IDENTIFIER: Interstate Wavelength, Version 1.0**

The following additional terms and conditions are applicable to Sales Orders for Comcast Business Interstate Wavelength Services. A further description of the Service is set forth in Schedule A-1 hereto.

**ARTICLE 1. DEFINITIONS**

Capitalized terms not otherwise defined herein shall have the meaning ascribed to them in the General Terms and Conditions.

“**Estimated Availability Date**” means the target date for delivery of Service.

“**Services**” means Interstate Wavelength Services.

**ARTICLE 2. SERVICES**

This attachment shall apply to the Services, as defined herein. A further description of these Services is set forth in Schedule A-1 hereto which is incorporated herein by reference.

**ARTICLE 3. PROVIDER**

Service shall be provided by Comcast Business Communications, LLC or its applicable affiliates and subsidiaries.

Comcast may provide Customer with Service and fiber maps during the Term of the Agreement to further describe Service availability. Such maps are hereby deemed Comcast Confidential Information (as defined in the Agreement).

**ARTICLE 4. REGULATORY APPROVAL; TRAFFIC MIX**

Comcast’s pricing for Service may be subject to FCC, public service commission or other regulatory approval. Further, Customer represents that its use of Service hereunder will be exclusively for the transmission of communications traffic that is classified as jurisdictionally interstate under FCC rules and regulations. For services for which the endpoints of the service are in the same state, Customer specifically represents that more than ten percent (10%) of the traffic transmitted via the Service will be interstate. (For this purpose, Customer’s representation relates to the traffic carried over the Service rather than the locations of the physical endpoints of the facility over which the Service is delivered.) If at any time during the term of the Agreement or any Service Term, less than ten percent (10%) of the traffic transmitted via such Service(s) is interstate, Customer shall immediately notify Comcast of the same in writing. Further, Comcast reserves the right, in its reasonable sole discretion, to reclassify Customer’s use of Service as jurisdictionally interstate

or intrastate, as appropriate. Customer agrees to indemnify, and hold Comcast harmless from any claims by third parties, including, without limitation, any governmental entities, resulting from or arising out of Customer’s failure to properly represent or certify the jurisdictional nature of its use of the Service(s).

**ARTICLE 5. CUSTOM INSTALLATION FEES AND OTHER FEES**

Once Comcast accepts a Sales Order for Service, Comcast will invoice Customer for all Custom Installation Fee(s). Customer will pay the Custom Installation Fee(s) within thirty (30) calendar days of the invoice date unless a payment schedule is specified in the applicable Sales Order.

**ARTICLE 6. PROVISIONING INTERVAL**

Following its acceptance of a Sales Order, Comcast shall notify Customer of the Estimated Availability Date applicable to that Sales Order. Comcast shall use commercially reasonable efforts to provision the Service on or about the Estimated Availability Date; provided, however, that Comcast’s failure to provision the Service by the Estimated Availability Date shall not constitute a breach of the Agreement.

**ARTICLE 7. SERVICE COMMENCEMENT DATE**

Comcast shall inform Customer when the Service is available and performing at the Service Location in accordance with the “Technical Specifications” set forth in Schedule A-1 hereto (“**Availability Notification**”). Charges for Service shall begin to accrue as of the Service Commencement Date. The Service Commencement Date shall be the earliest of: (A) the date on which Customer confirms receipt of and concurrence with the Availability Notification; (B) five (5) business days following the date of the Availability Notification, if Customer fails to notify Comcast that the Service does not comply materially with the Technical Specifications (as defined below); or (C) the date on which Customer first uses the Service. To the extent that a Service Term has not been expressly set forth in a Sales Order, the Service Term for such Sales Order shall be twelve (12) months.

**ARTICLE 8. TERMINATION CHARGES; PORTABILITY; UPGRADES**

**8.1** The charges set forth or referenced in each Sales Order have been extended to Customer in reliance on the Service Term set forth therein.

**8.2 Termination Charges.**

**A.** Subject to Section 8.3, in the event that Service is terminated following Comcast's acceptance of the applicable Sales Order but prior to the Service Commencement Date, Customer shall pay Termination Charges equal to the costs and expenses incurred by Comcast in installing or preparing to install the Service plus twenty percent (20%).

**B.** Subject to Section 8.3, in the event that Service is terminated on or following the Service Commencement Date but prior to the end of the applicable Service Term, Customer shall pay Termination Charges equal to a percentage of the monthly recurring charges remaining for the unexpired portion of the then-current Service Term, calculated as follows:

- i.** 100% of the monthly recurring charges with respect to months 1-12 of the Service Term; plus
- ii.** 80% of the monthly recurring charges with respect to months 13-24 of the Service Term; plus
- iii.** 65% of the monthly recurring charges with respect to months 25 through the end of the Service Term; plus
- iv.** 100% of any remaining, unpaid Custom Installation Fees.

**C.** Termination Charges shall be immediately due and payable upon cancellation or termination and shall be in addition to any and all accrued and unpaid charges for the Service rendered by Comcast through the date of cancellation or termination.

**8.3 Exclusions.** Termination Charges shall not apply to Service terminated by Customer as a result of Comcast's material and uncured breach in accordance with the General Terms and Conditions.

**8.4 Portability.** Customer may terminate an existing Service (an "**Existing Service**") and turn up a replacement Service (*i.e.*, activate Service with termination points on Comcast's network that are different than those of the Existing Service) (a "**Replacement Service**") without incurring Termination Charges with respect to the Existing Service, provided that (a) the Replacement Service must have a Service Term equal to or greater than the remaining Service Term of the

Existing Service but in no event less than twelve (12) months; (b) the Replacement Service must have monthly recurring charges equal to or greater than the monthly recurring charges for the Existing Service; (c) Customer submits a Sales Order to Comcast for the Replacement Service within ninety (90) days after termination of the Existing Service and that Sales Order is accepted by Comcast; (d) Customer reimburses Comcast for any and all installation charges that were waived with respect to the Existing Service; and (e) Customer pays the actual costs incurred by Comcast in installing and provisioning the Replacement Service.

**8.5 Upgrades.** Customer may upgrade the speed of an Existing Service or convert an Unprotected Circuit to a Protected Circuit (as defined and further described in Schedule A-1 herein) (in each case, an "**Upgraded Service**") without incurring Termination Charges, provided that (A) the Upgraded Service must assume the remaining Service Term of the Existing Service, but in no event less than twelve (12) months; (B) the Upgraded Service must have the same points of termination on Comcast's Network as the Existing Service; (C) Customer submits a Sales Order to Comcast for the Upgraded Service and that Sales Order is accepted by Comcast; (D) Customer pays Comcast's applicable nonrecurring charges for the Upgraded Service; and (E) Customer agrees to pay the applicable monthly recurring charges for the Upgraded Service commencing with the Service Commencement Date for such Upgraded Service.

**ARTICLE 9. ADDITIONAL INFORMATION**

As necessary for the interconnection of the Service with services provided by third parties, Comcast may request (as applicable), and Customer will provide to Comcast, circuit facility assignment information, firm order commitment information, and design layout records necessary to enable Comcast to make the necessary cross-connection between the Service and Customer's other service provider(s). Comcast may charge Customer nonrecurring and monthly recurring cross-connect charges to make such connections.

**ARTICLE 10. TECHNICAL SPECIFICATIONS; SERVICE LEVEL AGREEMENT**

The technical specifications applicable to the Service are set forth in Schedule A-1 hereto ("**Technical Specifications**"). The service level agreement applicable to the Service is set forth in Schedule A-2 hereto and incorporated herein by reference.

**COMCAST ENTERPRISE SERVICES  
PRODUCT-SPECIFIC ATTACHMENT  
INTERSTATE WAVELENGTH SERVICES**

**SCHEDULE A-1  
SERVICE DESCRIPTIONS AND TECHNICAL SPECIFICATIONS**

**Interstate Wavelength Version 1.0**

Comcast’s Interstate Wavelength Services will be provided in accordance with the service descriptions and technical specifications set forth below:

**1. Service Descriptions.**

The Service is a private, dedicated, point-to-point transport service that provides secure, high-performance network connectivity between two (2) Service Locations to send and receive data by utilizing Dense Wavelength Division Multiplexing (DWDM) technology over Comcast lit fiber-optic lines. The Service can be delivered as either an Unprotected Circuit or a Protected Circuit, each as defined below.

**A. Unprotected.** An “**Unprotected Circuit**” is a point-to-point linear circuit utilizing one (1) static physical fiber path (“**Fiber Path**”) terminating on single Comcast-owned Network Terminating Equipment (“**NTE**”) at each circuit endpoint. NTE constitutes Comcast Equipment. Protection Switching (as defined below) is not provided at the NTE or within the transport network, even if Customer has more than one Unprotected Circuit. 10G and 100G circuits are available as Unprotected Circuits.

**B. Protected.** A “**Protected Circuit**” is a point-to-point linear circuit utilizing two (2) diverse Comcast Fiber Paths that both terminate on the same NTE at each circuit endpoint, but diverge along the circuit at the nearest point of divergence from each circuit endpoint and are routed to diverse Comcast headends. Each circuit utilizes a dedicated port on the NTE for the Customer handoff. One of the two (2) diverse Fiber Paths is designated by Comcast as the primary Fiber Path and the other Fiber Path is designated by Comcast as the secondary Fiber Path. In the event the primary Fiber Path is unavailable, Comcast re-routes traffic from the primary Fiber Path to the secondary Fiber Path (“**Protection Switching**”). Only one (1) Fiber Path is active at a given time. Only 10G circuits are available as Protected Circuits.

**2. Technical Specifications for Services.**

The Services are bi-directional, point-to-point optical Services capable of transporting high bandwidths (*e.g.*, 10G and 100G) using Ethernet or Optical Transport Network (OTN) protocols. Each Service constitutes an entire wavelength or “Lambda” channel of a DWDM.

**Customer Interface.** Table 1 shows the Customer interfaces supported, by protocol, for the Service.

<b>Protocol</b>	<b>Interface(s)</b>
Ethernet – 10G LAN PHY	10GBase-LR
Ethernet – 10G WAN PHY	10GBase-LW
Ethernet – 100G	100GBASE-LR4
OTN – 10G	OTU2, OTU2e
OTN – 100G	OTU4

**Table 1: Wavelength Services Protocols and Customer Interfaces**

**3. Service Monitoring, Technical Support and Maintenance.**

**A. Network Monitoring.** Comcast monitors Services on a 24x7x365 basis.

**B. Technical Support.** Comcast provides a toll-free trouble reporting telephone number to the Comcast Business Services Network Operations Center that operates on a 24x7x365 basis. Comcast provides technical support for Service-related inquiries. Comcast Business Services Network Operations Center will not offer consulting or advice on issues relating to non-Comcast Equipment.

**C. Escalation.** Reported troubles are escalated within the Comcast Business Services Network Operations Center to meet the

response/restoration objectives described below (Response and Restoration Standards). Service issues are escalated within the Comcast Business Services Network Operations Center as follows: to a Supervisor at the end of the applicable objective time interval plus one (1) hour; to a Manager at the end of the applicable objective time interval plus two (2) hours; and to a Director at the end of the applicable objective time interval plus four (4) hours.

**D. Maintenance.** Comcast’s standard maintenance window for Services is Sunday to Saturday from 12:00am to 6:00am local time. Scheduled maintenance for Services is performed during the maintenance window and will be coordinated between Comcast and the Customer. Comcast provides a minimum three (3) business days’ notice for maintenance expected to impact service for <=50ms. Comcast provides a minimum of seven (7) business days’ notice for maintenance expected to impact service for >50ms. Emergency maintenance is performed as needed without advance notice to Customer.

**E. Comcast Equipment.** Comcast provides certain Comcast Equipment, which will reside at the Service Location, for provisioning its Services. Comcast will retain ownership and management responsibility for this Comcast Equipment. This Comcast Equipment must only be used for receipt of Services.

4. **Restoration Standards.** Comcast has the following response and restoration objectives:

CATEGORY	OBJECTIVE	MEASUREMENT	REMEDIES
<i>Mean Time to Restore Comcast Equipment</i>	4 hours	Averaged Over A Month	Escalation (see above)
<i>Mean Time to Restore Services</i>	6 hours	Averaged Over A Month	Escalation (see above)

Customer shall bear any expense incurred, e.g., dispatch/labor costs, where a Service Interruption (as defined in Schedule A-2) is found to be the fault of Customer, its end users, agents, representatives or third-party suppliers.

5. **Customer Responsibilities.**

Customer shall have the following responsibilities related to the installation, support, and maintenance of the Service:

- Connecting to the Demarcation Point.
- Responsibility for all equipment and service beyond the Demarcation Point and/or interconnection between Comcast Equipment and the wiring at the Demarcation Point.
- Procuring and maintaining equipment which is technically compatible with the Service and the Network.
- Providing an operating environment with temperatures not below fifty-five (55) or above eighty-five (85) degrees Fahrenheit. Humidity shall not exceed ninety (90) percent at eighty-five (85) degrees Fahrenheit.
- Providing secure space sufficient for access to one (1) standard, freestanding, equipment cabinet at each of the Customer facilities, no further than fifty feet from the Customer router or switch interface.
- Providing outside cable entry conduit(s), entry cable ground point, and internal building conduit to allow Comcast the ability to rod/rope a fiber optic cable to the Demarcation Point.
- Locating and marking all private underground utilities (water, electric, etc.) along path of new underground placement not covered by utility companies.
- Providing a pull rope in any existing duct that Comcast is to use and ensure existing duct is serviceable for Comcast use.
- Obtaining “right-of-way” entry easement for Comcast facilities and equipment from property owners at each Customer location.
- Coring of the Service Location’s outside wall and internal walls. Upon request, Comcast can perform this activity on an “as needed” basis for an additional one-time fee.
- Providing UPS AC power (back-up battery power) equipment, circuit sizing to be determined, if applicable.
- Emergency local generator backup service, if applicable.
- Providing access to the buildings and Demarcation Point at each Service Location to allow Comcast and its approved contractors to install the Service and for regular (8am - 5pm) and emergency (24 hour) service and maintenance of Comcast’s equipment and

facilities.

- Providing, installing and maintaining a device that is capable of interconnecting network traffic between the Service and the Customer's Local Area Network ("LAN").
- Providing a point of contact ("POC") for installation, service activation and any maintenance activities.

**COMCAST ENTERPRISE SERVICES  
PRODUCT-SPECIFIC ATTACHMENT  
INTERSTATE WAVELENGTH SERVICES**

**SCHEDULE A-2  
SERVICE LEVEL AGREEMENT**

**Interstate Wavelength, Version 1.0**

The Service(s) are backed by the following Service Level Agreement (“SLA”):

**1. Definitions.**

Capitalized terms not otherwise defined herein shall have the meaning ascribed to them in the Interstate Wavelength Services PSA or the General Terms and Conditions.

“**Planned Service Interruption**” means any Service Interruption caused by planned work such as scheduled maintenance or planned enhancements or upgrades to the network.

“**Service Interruption**” means an interruption in transmission that renders the Service unusable due to a total loss of signal for the Service. The Service shall be “**Available**” in the absence of a Service Interruption.

**2. Interstate Wavelength Service Level Agreements.**

**A. Availability SLA**

Comcast’s liability and Customer’s sole remedy for Service Interruptions, and errors, omissions, interruptions, delays, outages, or defects in transmission or switching of any Services (individually or collectively, “**Liability**”), shall be limited to the amounts set forth in the Tables in this Section 2(A) below (“**Availability Credit**”). For the purposes of calculating credit for a Service Interruption, the “**Length of Service Interruption**” begins when the Customer reports such Service Interruption and a trouble ticket is opened, and concludes upon the closing of the same trouble ticket or, if sooner, the termination of the Service Interruption, less any time Comcast is awaiting additional information or premises testing from the Customer. In no event shall the total amount of Availability Credit issued to Customer’s account on a per-month basis exceed 50% of the total monthly recurring charge (“**MRC**”) associated with the impacted portion of the Service set forth in the Sales Order. The Length of Service Interruptions for separately occurring Service Interruptions will not be aggregated for purposes of determining Availability Credit allowances. For purposes of calculating the Service credit percentage in the below tables, only the MRC of the impacted wavelength circuit shall apply. To qualify, Customer must request the Availability Credit from Comcast within thirty (30) days of the beginning of the Service Interruption. Comcast shall not incur any Liability, including Availability Credit, for any failure of the Services caused by force majeure events, Planned Service Interruptions, Customer actions, omission or equipment (including all Customer-Provided Equipment), or any other items set forth in the “Exceptions to Credit Allowances” section below.

**TABLE 1: Availability SLA for Unprotected Circuits**

<b>Availability</b>	<b>Length of Service Interruption</b>	<b>Service Credit (Based on MRC of only the impacted wavelength circuit)</b>
≥ 99.44%	Less than 4 hours	No Credit
≥ 98.89% and < 99.44%	At least 4 hours but less than 8 hours	10% of the MRC
≥ 98.33% and < 98.89%	At least 8 hours but less than 12 hours	25% of the MRC
< 98.33%	At least 12 hours or greater	50% of the MRC

**TABLE 2: Availability SLA for Protected Circuits\***

<b>Availability</b>	<b>Length of Service Interruption</b>	<b>Service Credit (Based on MRC of only the impacted wavelength circuit)</b>
≥ 99.99%	Less than 4 minutes 19 seconds	No Credit
≥ 99.86% and < 99.99%	At least 4 minutes 20 seconds but less than 1 hour	10% of the MRC
≥ 98.61% and < 99.85%	At least 1 hour but less than 10 hours	25% of the MRC
< 98.61%	At least 10 hours or greater	50% of the MRC

\*Availability Credits for Protected Circuits are available only to the extent both Fiber Paths for such Protected Circuit simultaneously sustain a Service Interruption. For clarity and avoidance of doubt, if either Fiber Path for a Protected Circuit is Available, the entire Protected Circuit shall be considered Available for purposes of calculating Availability.

SEPARATELY OCCURRING SERVICE INTERRUPTIONS ARE NOT AGGREGATED FOR THE PURPOSES OF DETERMINING CREDIT ALLOWANCES.

**B. Exceptions and Terms applicable to all SLAs**

**1. Remedy Processes**

All claims and rights arising under this SLA must be exercised by Customer in writing within the time period set forth in Section 2(A). The Customer must submit the following information to the Customer's Comcast account representative with any and all claims for credit allowances: (a) Organization name; (b) Customer account number; and (c) basis of credit allowance claim (including date and time, if applicable). Comcast will acknowledge and review all claims promptly and will inform the Customer by electronic mail or other correspondence whether a credit allowance will be issued or the claim rejected, with the reasons specified for the rejection.

**2. Exceptions to Credit Allowances**

Comcast's failure to meet either of the SLAs set forth on this Schedule A-2 shall not qualify for the remedies set forth herein if such failure is related to, associated with, or caused by: Planned Service Interruptions or other scheduled maintenance events; Customer actions or inactions; Customer-provided power or equipment (including Customer-Provided Equipment); any third party not contracted through Comcast, including, without limitation, Customer's users, third-party network providers, any power, equipment or services provided by third parties; or an event of force majeure as defined in the Agreement.

**3. Other Limitations**

THE TOTAL CREDIT ALLOWANCES PER CALENDAR MONTH UNDER THIS SCHEDULE A-2 IS CAPPED AT 50% OF THAT MONTH'S MRC FOR THE IMPACTED PORTIONS OF SERVICE. In addition, the remedies set forth in this Service Level Agreement shall be Customer's sole and exclusive remedies for any Service Interruption, outage, unavailability, delay, or other degradation, or any Comcast failure to meet the service objectives.