

March 2016

Docket UT-132234  
San Juan Submarine Fiber Cable Inspection and Maintenance  
Attachment 1

# San Juan Islands Transport Systems Measurement, Maintenance and Inspection



**CenturyLink<sup>®</sup>**

# Agreement Terms

**By March 31 of each year, CenturyLink will report to the Commission all inspections and maintenance performed during the preceding year for both the underwater fiber cable and microwave systems.**

**In each report for each underwater fiber facility, CenturyLink will: identify the baseline measurements of decibel and signal strength; identify any loss of decibel or signal strength; and describe ongoing monitoring for each underwater facility.**

**In each report for each microwave system, CenturyLink will state whether it followed its current Antenna and Tower Routine Inspection, which is attached as Appendix A to this Settlement Agreement. ... CenturyLink will report to the Commission the ability of both San Juan microwave systems to provide redundant capacity between the various island customers to the host switch located in Friday Harbor and the redundant capacity between Friday Harbor and Bellingham, Washington. CenturyLink will also affirm in this report that the two microwave systems have sufficient capacity to maintain CenturyLink's intrastate voice and critical services traffic on a diverse route between the islands and the mainland at normal call volumes.**

# Submarine Fiber Cable

Lopez, WA to La Conner, WA

November 10, 2015



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# Lopez, WA to La Conner, WA.

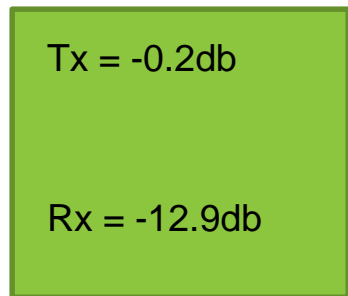
This report regards loss measurement between the Coriant 7100 Nano equipment located at Lopez Island and at LaConner Washington

- Loss was calculated as the difference between the transmitted (Tx) level and the received (Rx) level.
- These levels were seen on the Optical Service Channels (OSCs) of the 7100N Optical Add/Drop Multiplexer (OADM) High Speed cards.

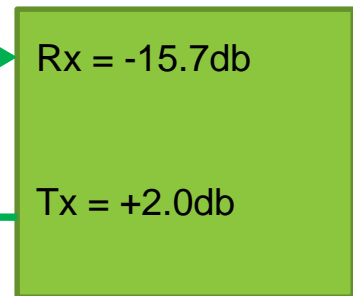
# Lopez, WA to La Conner, WA.

LOPZWAXXO02010025  
Degree A

LACNWAAXKRC01CUST06B  
Degree A



Overall fiber loss: -15.5db

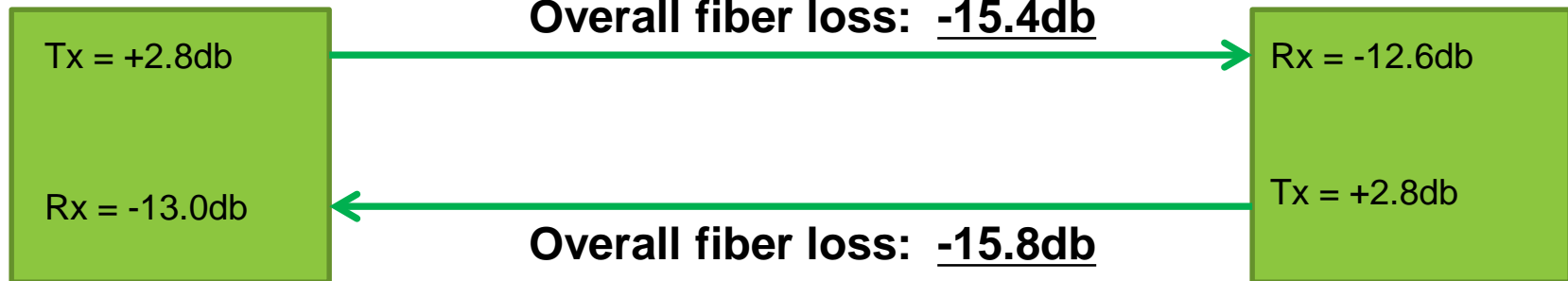


Overall fiber loss: -14.9db

# San Juan Island fiber results.

LOPZWAXXO02010025  
Degree B

LACNWAAXKRC01CUST06A  
Degree A



# Lopez, WA to La Conner, WA

## Coriant 7100 Optical Specifications

Lopez 7100N is equipped with OADM-LR High-speed cards

- The OADM88-LR supports span loss of 14 dB to 26 dB

La Conner 7100N is equipped with Long Range Amplifier Modules (LRAM-88) in both Optical Line Amplifier shelves

- The LRAM-88 can support span loss of 14 dB to 26 dB

# Submarine Fiber Cable

## Lopez Island to Friday Harbor

November 10, 2015



**CenturyLink®**

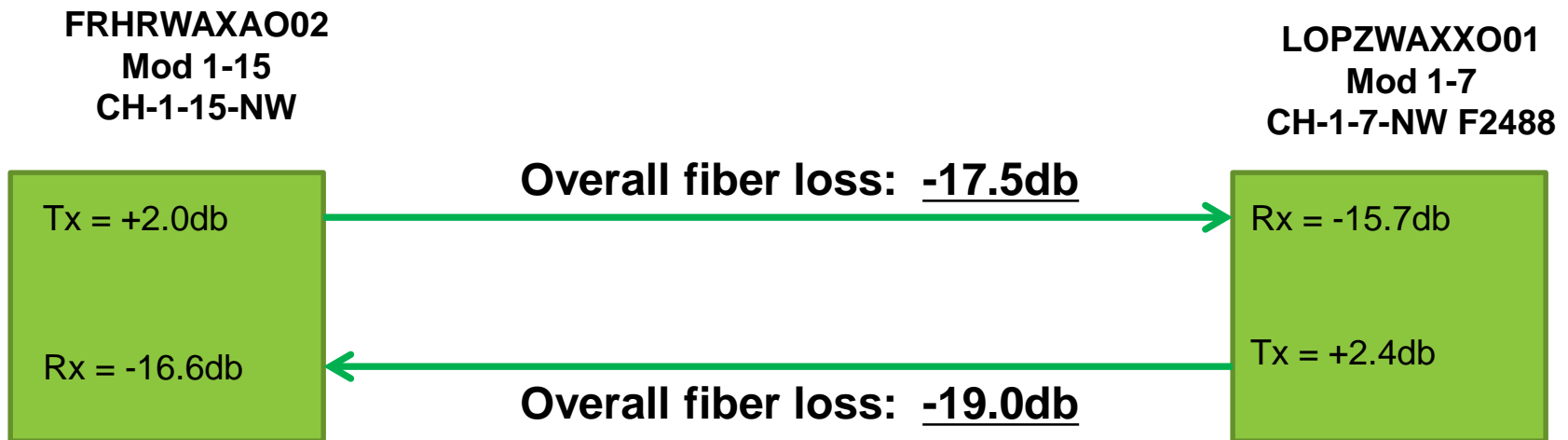


# Lopez Island to Friday Harbor.

This report regards loss measurement between the Fujitsu FW7420 equipment located at Lopez Island and at Friday Harbor.

- Fiber loss was calculated as the difference between the transmitted (Tx) level and the received (Rx) level.
- These levels were seen on the working channels of the FW7420 High Speed cards.

# Lopez Island to Friday Harbor.



# Submarine Fiber Cable Landings

**Field operations technicians conducted site surveys where submarine cable first appears on land and is accessible. The surveys involved visual examination.**

- ✓ fiber optic cable**
- ✓ vault and pedestal**
- ✓ surrounding environment**

**No defects, faults or significant changes were observed.**