

**FIBER OPTIC CABLE  
TESTING - LEVEL 2**

**Project Name:** \_\_\_\_\_ **Test Date:** \_\_\_\_\_

**FOC TYPE:** \_\_\_\_\_

This procedure outlines Level 2 test to be performed on Fiber Optic Cable. Perform the following tests with OTDR and Power Meter on each individual fiber at 1310 nm and 1550 nm in both directions after the completion of all splicing and connections.

**Fiber Optic Cable under test runs from:**

**ITS Junction Box**  **OR ITS Cabinet**   
**Route:** \_\_\_\_\_ **MM** \_\_\_\_\_ . \_\_\_\_\_ **NB/SB/EB/WB/Median**  
**Nearest Side Street Name:** \_\_\_\_\_

**TO**

**ITS Junction Box**  **OR ITS Cabinet**   
**DMS #** \_\_\_\_\_ **Route:** \_\_\_\_\_ **MM** \_\_\_\_\_ . \_\_\_\_\_ **NB/SB/EB/WB/Median**  
**Nearest Side Street Name:** \_\_\_\_\_

**Total Length of FOC under test (in feet):** \_\_\_\_\_

**OTDR:** \_\_\_\_\_  
**Manufacturer /Model No.** \_\_\_\_\_

**Power Meter:** \_\_\_\_\_  
**Manufacturer /Model No.** \_\_\_\_\_

**Cabinet Location/No.:** \_\_\_\_\_

**Fiber Optic Cable Manufacturer:** \_\_\_\_\_

**Fiber Optic Cable Model No.:** \_\_\_\_\_

**Fiber Optic Cable Model/ Core:** \_\_\_\_\_

**Fiber Manufacturer:** \_\_\_\_\_

**Fiber Type:** \_\_\_\_\_

**1: OTDR**

No.	Task	Required Value	Actual Value	Pass	Fail	Comments
I.	Provide certification from the equipment manufacturer that the OTDR was calibrated within 3 months of its use on the contract.					
II.	Certify that OTDR equipment will be recalibrated at every 6 months interval until the completion of successful testing					

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III.	Set OTDR threshold to record all events greater than or equal in absolute value to 0.05 dB along the positive and negative axes	X	X			
<b>No.</b>	<b>Task</b>	<b>Required Value</b>	<b>Actual Value</b>	<b>Pass</b>	<b>Fail</b>	<b>Comments</b>
IV.	Perform OTDR testing at 1310 nm and 1550 nm in both directions and verify following parameters from the report:	2 paper copies and electronic file generated by OTDR				
a.	Maximum dB loss for any single event	≤ 0.3 dB @ 1310 nm				
b.	Net result of the bi-directional trace average across each splice event	≤ 0.15 dB @ 1310 nm				
c.	Reflectance at each connector	≤ -55 dB				
d.	Fiber loss across each fiber segment	≤ 0.4 dB/km @ 1310 nm ≤ 0.3 dB/km @ 1550 nm				
IV.	Verify that dark fiber segments not being utilized by the signal transmission equipment are included in OTDR report	X	X			

**2: POWER METER**

<b>No.</b>	<b>Task</b>	<b>Required Value</b>	<b>Actual Value</b>	<b>Pass</b>	<b>Fail</b>	<b>Comments</b>
I.	Provide certification from the equipment manufacturer that the power meter was calibrated within 3 months of its use on the contract.	X	X			
II.	Certify that Power Meter will Be recalibrated at every 6 months interval until the completion of successful testing	X	X			
III.	Perform Power Meter testing at 1310 nm and 1550 nm in both directions and verify following parameters from the report:	2 paper copies and electronic file generated by Power Meter				
a.	Average connector loss for fiber segment under test	≤0.5 db@1310nm				
b.	Maximum connector loss for	≤0.8dB@1310 nm				

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	any single connector					
IV.	Verify cable continuity and cable connectors	X	X			
V.	Verify fiber loss (EIA/TIA 568) For Single mode fiber	0.1db per 600ft for 1300nm				
<b>No.</b>	<b>Task</b>	<b>Required Value</b>	<b>Actual Value</b>	<b>Pass</b>	<b>Fail</b>	<b>Comments</b>
VI.	Verify ground resistance	X	X			

**3: DEVICE CONNECTION**

Below list each fiber connection assigned to any ITS device, cabinet, modem etc.

DEVICE			FOC (Distribution)			FOC (Termination)		
TYPE	ROUTE	MILEPOST	TYPE	BUNDLE	FIBER	TYPE	BUNDLE	FIBER

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**LEVEL 2 TEST RESULTS:**

PASS

FAIL

**Correction Work Items:**

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

We agree that Level 2 testing of the Fiber Optic Cable has been performed and that the information above accurately represent the results of the test.

Contractor Name: \_\_\_\_\_

Contractor Representative Name: \_\_\_\_\_

Signature and Date: \_\_\_\_\_

ITS Inspector: \_\_\_\_\_

Signature and Date: \_\_\_\_\_

Resident Engineer Name: \_\_\_\_\_

Signature and Date: \_\_\_\_\_

**Corrected Work Items:**

**ITS Inspector Signatures & Date**

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_