400 Godin Avenue
Quebec City QC G1M 2K2
Canada

CALIBRATION CERTIFICATE

Customer:		**Address:**	
Description:	Optical Time Domain Reflectometer (OTDR)		
Serial no.:	~~922031~~	**Model no.:**	720C-Q1-EA-EI
Calibration location:	1/F, Block C, Funing High-Tech Park, No. 71, Xintian Avenue, Fuyong, Shenzhen, China, 518103	**Calibration date:**	2017-09-12

As found					
☐ Initial calibration	☑ Within specifications (i)	☐ Within specifications* (ii)	☐ Outside specifications* (iii)	☐ Outside specifications (iv)	☐ Defective operation
*See results page for details on "As found" status					
Comments on unit status:					

Action taken		
☑ No adjustment was made	☐ Adjustments were made	☐ Repair was performed

As left	
☑ Within specifications	☐ Outside specifications

Calibration conditions
Temperature: 23 °C ± 2 °C

Standard(s) used to establish traceability			
Description	Inventory number	Calibration date	Calibration validity
Standard(s) used for "As found" measurements			
METAS Length Reference Fiber MM	LRF2015.08	2015-06-25	Indefinite
METAS Length Reference Fiber SM	LRF2015.14	2015-09-24	Indefinite
Standard(s) used for "As left" measurements			
METAS Length Reference Fiber MM	LRF2015.08	2015-06-25	Indefinite
METAS Length Reference Fiber SM	LRF2015.14	2015-09-24	Indefinite

Remarks:

Optical ports are always cleaned before calibration.
EXFO certifies that the unit has been calibrated using standards traceable to a national metrology institute (NIST, NPL, NRC, METAS or other), natural physical constants or using ratio measurements. NIST is the National Institute of Standards and Technology in the USA, NPL is the National Physical Laboratory in the UK, NRC is the National Research Council in Canada and METAS is the Swiss Federal Office of Metrology.
All uncertainties are reported with a level of confidence of 95 %. Calibration is based on the ISO/IEC 17025 standard.

EXFO
Serial No.: 922031
Cal./test date: 2017-09-12 | Cal./test due:

Xiaolian Lan
Calibration operator

2017-09-12
Date

Dynamic range test (Single Mode)			
Procedure: IETA-00366 (pulse: 10 µs, range: 240 km, time: 45 s)			
Nominal wavelength (nm)	Measured dynamic range (dB)	Test limit (dB)	Verification
As found			
1310	37.3	35.5	Pass
1550	35.4	33.9	Pass
As left			
1310	37.3	35.5	Pass
1550	35.4	33.9	Pass

Attenuation dead zone test (Single Mode)			
Procedure: IETA-00366 (pulse: 10 ns, range: 0.65 km, reflectance: -45 dB)			
Nominal wavelength (nm)	Measured attenuation dead zone (m)	Test limit (m)	Verification
As found			
1310	4.17	4.99	Pass
1550	4.38	5.11	Pass
As left			
1310	4.17	4.99	Pass
1550	4.38	5.11	Pass

Event dead zone test (Single Mode)			
Procedure: IETA-00366 (pulse: 3 ns, range: 0.65 km, reflectance: -45 dB)			
Nominal wavelength (nm)	Measured event dead zone (m)	Test limit (m)	Verification
As found			
1310	0.67	0.78	Pass
1550	0.67	0.81	Pass
As left			
1310	0.67	0.78	Pass
1550	0.67	0.81	Pass

Distance calibration (Single Mode)							
Procedure: IETA-00366 (pulse: 30 ns, range: 3.5 km, time: 15 s)							
Nominal wavelength (nm)	Measured length (m)	Reference length (m)	Deviation (m)	Uncertainty (m)	Specification (m)	Conformance limit (m)	Verification*
As found							
1310	2349.03	2348.98	0.05	0.06	0.97	0.92	i
1550	2349.83	2349.98	-0.15	0.28	0.97	0.74	i
As left							
1310	2349.03	2348.98	0.05	0.06	0.97	0.92	i
1550	2349.83	2349.98	-0.15	0.28	0.97	0.74	i

Linearity test (Single Mode)		
Procedure: IETA-00366 (wavelength: 1310 nm, pulse: 10 µs, range: 21.8 dB, time: 45 s)		
Measured non linearity (dB)	Test limit (dB)	Verification
As found		
0.01	0.03	Pass
As left		
0.01	0.03	Pass

Dynamic range test (Multi Mode)			
Procedure: IETA-00366 (pulse: 1 µs, range: 5 km, time: 45 s)			
Nominal wavelength (nm)	Measured dynamic range (dB)	Test limit (dB)	Verification
As found			
850	26.2	24.8	Pass
1300	28.4	26.7	Pass
As left			
850	26.2	24.8	Pass
1300	28.4	26.7	Pass

Attenuation dead zone test (Multi Mode)			
Procedure: IETA-00366 (pulse: 10 ns, range: 0.65 km, reflectance: -35 dB)			
Nominal wavelength (nm)	Measured attenuation dead zone (m)	Test limit (m)	Verification
As found			
850	2.77	3.36	Pass
1300	3.21	3.77	Pass
As left			
850	2.77	3.36	Pass
1300	3.21	3.77	Pass

Event dead zone test (Multi Mode)			
Procedure: IETA-00366 (pulse: 3 ns, range: 0.65 km, reflectance: -35 dB)			
Nominal wavelength (nm)	Measured event dead zone (m)	Test limit (m)	Verification
As found			
850	0.47	0.55	Pass
1300	0.43	0.52	Pass
As left			
850	0.47	0.55	Pass
1300	0.43	0.52	Pass

Distance calibration (Multi Mode)							
Procedure: IETA-00366 (pulse: 30 ns, range: 3.5 km, time: 15 s)							
Nominal wavelength (nm)	Measured length (m)	Reference length (m)	Deviation (m)	Uncertainty (m)	Specification (m)	Conformance limit (m)	Verification*
As found							
850	114.70	114.69	0.01	0.11	0.91	0.83	i
1300	114.22	114.24	-0.02	0.08	0.91	0.85	i
As left							
850	114.70	114.69	0.01	0.11	0.91	0.83	i
1300	114.22	114.24	-0.02	0.08	0.91	0.85	i

Linearity test (Multi Mode)		
Procedure: IETA-00366 (wavelength: 850 nm, pulse: 1 µs, range: 12.9 dB, time: 45 s)		
Measured non linearity (dB)	Test limit (dB)	Verification
As found		
-0.01	0.03	Pass
As left		
-0.01	0.03	Pass

OTDR Self-Test
Procedure: IETA-00366
Status (Pass/Fail)
As found
Pass
As left
Pass

* Verification status legend:
i) Within specifications;
ii) Within specifications: All measured results are within specifications limits. In conformance with ISO/IEC 17025, full compliance cannot be stated because of measurement uncertainties. Nevertheless, results indicate that the instrument is likely to perform according to specifications;
iii) Outside specifications: Some measured results are outside specification limits. Nevertheless, as per ISO/IEC 17025, non compliance cannot be stated because of measurement uncertainties;
iv) Outside specifications.
Unless otherwise stated, 100 % of shipped units have all "As left" results in case i.