ATf Fibre Ltd

ATF Fibre OTDR Certificate

v1.2.0 User Manual

Professional OTDR certificate preparation, fibre test documentation and trace analysis

Includes integrated Trace Analyser workflow for SOR trace review and wavelength comparison

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This manual is provided for trained fibre optic test personnel and customers using ATF Fibre OTDR Certificate software.

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Intended audience

This user manual is intended for fibre optic test engineers, project managers, fibre installation contractors, quality reviewers, and customers who use ATF Fibre OTDR Certificate to prepare OTDR certificate documentation and review SOR traces.

Important

The software supports professional documentation and review. Final test method, launch/receive fibre setup, acceptance thresholds and project compliance remain the responsibility of the test engineer and project specification.

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1. Introduction

ATF Fibre OTDR Certificate v1.2.0 is a desktop software application for creating professional OTDR certificate reports from SOR files. It is designed to help users load OTDR test results, review decoded fibre measurements, apply an acceptance-loss budget, preview certificate output, and export customer-ready documentation.

- Prepare Basic and Detailed OTDR certificate reports.
- Load SOR files from OTDR instruments and decode key fibre test information.
- Review pass/fail status using built-in budget and reflectance criteria.
- Add job details, company branding, OTDR equipment details and sign-off information.
- Use the integrated Trace Analyser to inspect OTDR traces and compare wavelengths such as 1310 nm and 1550 nm.

Built on ATF Fibre field workflow

The certificate workflow and fixed certificate standard wording are based on ATF Fibre Ltd field documentation practice developed through fibre optic industry experience.

2. Software Activation / Licence

When the software starts, it may request a licence key. The licence controls access to the application and, depending on licence type, may also control trial limits.

1. Open the application.
2. If the activation window appears, copy the displayed Machine ID and provide it to ATF Fibre Ltd if a machine-bound licence is required.
3. Paste the licence key into the Licence Key field.
4. Select Activate.
5. Restart the application if requested.

Trial mode

Trial licences may show a trial watermark and may limit PDF exports. A full licence removes trial export limits and trial markings.

Message	Action
Licence signature invalid	Check that the full licence key was copied correctly, including all characters.
Licence for different computer	Request a new licence for the displayed Machine ID.
Licence expired	Contact ATF Fibre Ltd for a renewal or full licence.

3. Main Certificate Workflow

The normal workflow is simple: load SOR files, review the decoded measurements, enter job details, preview the report, and export the certificate.

1. Start the application.
2. Load one-way or bidirectional SOR files.
3. Open Job Details and complete project information.
4. Open OTDR Details and enter the instrument model, serial number and calibration date.
5. Review or adjust Budget Settings if the project requires non-default values.
6. Preview the Basic or Detailed certificate.
7. Use Focus Preview if a larger certificate preview is required.
8. Export the required PDF or HTML certificate output.
9. Open the Trace Analyser if the trace itself needs review or wavelength comparison.

Recommended habit

Always preview the certificate before exporting. Check cable ID, test locations, route length, pass/fail result, and sign-off information.

4. Loading SOR Files

SOR files contain OTDR trace and event information from an optical time domain reflectometer. ATF Fibre OTDR Certificate reads the SOR file and creates a certificate-ready summary.

- Use Load One-Way SOR Files for standard one-direction reports.
- Use Load A to B and Load B to A for bidirectional reporting.
- The loaded files table shows the files currently included in the report.
- Hide Loaded SOR Files can be used to give more room to the certificate preview.

File handling

Keep the original SOR files in the project folder. The software reads the files; it does not need to modify the original SOR files.

Decoded item	Usage
SOR origin / termination	Taken from the SOR file when available, unless job locations are entered manually.
Fibre ID	Detected from the SOR file or file naming where available.
Wavelength	Detected from the SOR data or file naming, for example 1310 nm or 1550 nm.
Event table	Shown in Detailed certificates when decoded event data is available.

5. One-Way Testing

One-way testing is used when the fibre is tested in a single direction, typically from location A to location B. The report uses the measured loss from the loaded SOR file and applies the selected budget criteria.

1. Select the option to load one-way SOR files.
2. Choose the relevant SOR file or batch of SOR files.
3. Review the loaded file list.
4. Preview the Basic or Detailed certificate.
5. Export the required report.

Launch and tail leads

The software identifies front and end events for budget length where available. Events before the front event are treated as launch lead. Events after the end event are treated as receive/tail lead.

6. Bidirectional Testing

Bidirectional testing compares measurements from both directions and creates a combined result. This is commonly used where the project specification requires two-way average loss values.

1. Load the A to B SOR files.
2. Load the B to A SOR files.
3. Check that the same fibre IDs and wavelengths are paired.
4. Review missing-pair warnings if any files do not match.
5. Preview the bidirectional certificate.
6. Export the required report.

Bidirectional item	Meaning
Paired fibres	A to B and B to A files are matched by fibre/wavelength where possible.
Average loss	If both directions are available, the final measured loss can use the two-way average.
Missing pair	If one direction is missing, the report notes that the pair is incomplete.

7. Job Details and Report Branding

The application allows customer-specific report details to be entered without changing the built-in certificate standard. The fixed standard footer is intentionally not editable.

Field / control	Purpose
Header Company	The main report header shown at the top of exported certificates.
Choose Logo	Selects a customer or company logo for the certificate header.
Job Details	Test reference, cable ID, test locations, engineer name and test date.
Sign-Off Details	Company and client sign-off names shown in the certificate sign-off area.
Additional Notes	Optional notes included in the certificate.

Fixed certificate footer

The certificate footer is fixed as: ATF Fibre OTDR IEC-61280-4-2 Tier 3 Standard Certificate. This protects the developed ATF Fibre certificate standard and keeps exported documentation consistent.

8. OTDR Details

OTDR Details are printed in the certificate so the customer can see which instrument was used for testing.

Field	Description
OTDR Model	Instrument model used for testing.
Serial Number	Instrument serial number.
Calibrated Date	Calibration date or calibration due date according to company procedure.

Good practice

Enter OTDR details before exporting final customer certificates. This helps with audit trail, repeatability and project quality records.

9. Budget Calculator Settings

The Budget Calculator compares measured loss against an allowance based on connector count, fibre length, attenuation rate and splice allowance. Default values can be adjusted in Budget Settings where project requirements differ.

Budget setting	Typical default
SM 1310 nm attenuation	Default 0.4 dB/km.
SM 1550 nm attenuation	Default 0.2 dB/km.
MM 850 nm attenuation	Default 3.0 dB/km.
MM 1300 nm attenuation	Default 0.8 dB/km.
Connector loss	Default 0.50 dB per connector.
SM splice allowance	Default 0.20 dB per splice.
MM splice allowance	Default 0.30 dB per splice.
Reflectance limit	Default -35 dB unless project settings require otherwise.

Budget formula

Allowed loss = connector count x connector loss + cable length km x attenuation dB/km + budget splice count x splice allowance dB.

- Cable length is based on the front-to-end event span where available.
- Connector pigtail splice allowances can be included according to the software setting.
- Manual overrides should only be used when required by project specification or customer instruction.

10. Pass/Fail Criteria

The pass/fail result is calculated from the measured loss, allowed loss, splice status and reflectance criteria. A fibre normally passes when the measured loss is within the allowed loss and no splice or reflectance criteria fail.

Result item	Meaning
Measured Loss	The loss measured by the OTDR record, or bidirectional average when applicable.
Allowed Loss	The calculated maximum allowed loss based on budget settings.
Margin	Allowed loss minus measured loss. Positive margin normally indicates pass.
Intermediate Splice Status	Checks maximum intermediate splice loss against the configured allowance.
Reflectance Status	Checks maximum reflectance against the configured reflectance limit.

Engineering responsibility

The software supports pass/fail review, but final acceptance criteria must match the project specification, contract requirements and test method.

11. Certificate Preview

The certificate preview allows the user to review the finished report before exporting. The preview is especially useful for checking branding, route summary, sign-off fields and pass/fail status.

- Preview Basic shows a customer-friendly certificate report with key values.
- Preview Detailed includes decoded event table information where available.
- Focus Preview hides controls and gives the report more screen space.
- Show Controls returns to setup mode.

Review mode

Use Focus Preview when checking the report layout with the customer or before creating the final PDF.

12. Exporting Basic and Detailed PDFs

The application can export certificate output for customer delivery and project records. Basic and Detailed versions serve different audiences.

Export type	Recommended use
Basic PDF	Best for customer sign-off, project handover, and summary acceptance records.
Detailed PDF	Best for technical review, event table checking and internal quality records.
HTML export	Useful for review, archiving or troubleshooting when required.

1. Load and review SOR files.
2. Complete job, OTDR, branding and sign-off details.
3. Preview the certificate.
4. Export the Basic or Detailed PDF.
5. Open the exported file and check the final layout before sending it to the customer.

13. Trace Analyser

The integrated Trace Analyser is available from the Analyser button in the certificate application. It opens as a separate window so trace review does not interfere with the certificate workflow.

Opening the analyser

1. Open ATF Fibre OTDR Certificate.
2. Select the Analyser button.
3. The ATF OTDR Trace Analyser window opens.
4. Use Open SOR(s) to load one or more SOR files.

Loading traces and comparing wavelengths

- Load one SOR file for single trace review.
- Load multiple SOR files for comparison, such as 1310 nm and 1550 nm traces from the same fibre.
- The Loaded SOR files list shows each trace, its wavelength and visibility status.
- Colour swatches in the list match the trace colours in the graph.

Show/hide traces

- Single-click a loaded SOR row to make that trace active.
- Double-click a loaded SOR row to show or hide that trace.
- At least one trace remains visible so the graph is never empty by mistake.

Event table and green event markers

The analyser reads native SOR KeyEvents and displays event markers on the trace. Green markers identify decoded event positions. The event information table lists distance, event type, loss and reflectance where available.

v1.2 packaged analyser improvement

The packaged v1.2 analyser uses a direct native KeyEvents strategy so event markers remain correct in the standalone EXE build.

A/B markers and 2-point loss

- Use marker controls to position A and B markers on the trace.
- The status area reports marker distance and 2-point loss information.
- A/B markers are for trace inspection and engineering review, not for changing the original SOR file.

Zoom and scrollbars

- Use X zoom to inspect distance sections of the trace.
- Use Y zoom to inspect loss/level detail.
- Scrollbars allow movement through zoomed graph areas.
- Reset or full acquisition view returns to the overall route view.

Remove and clear loaded SOR files

- Remove SOR removes the selected/active trace from the analyser.
- Clear SORs removes all loaded traces and returns the analyser to its empty state.
- Open SOR(s) replaces the current loaded list when a new set is selected.

14. Troubleshooting

Issue	Recommended action
Application does not start	Check licence activation, Windows permissions and whether the application folder is complete.
SOR file does not load	Confirm the file is a valid SOR file and not locked by another application.
Budget shows N/A or 0.000 allowed loss	Check that decoder dependencies are installed and that the event table/end event is decoded. The v1.2 environment requires otdrparser.
No green markers in analyser	Use the packaged v1.2 analyser build based on the direct native KeyEvents fix. Do not use older analyser builds.
Manual does not open	Confirm the PDF manual exists in the assets folder with the correct v1.2 filename.
PDF export blocked in trial mode	A trial licence may have export limits. Contact ATF Fibre Ltd for a full licence.

Support package

When asking for support, include the software version, Windows version, SOR sample if allowed, screenshot of the issue and a description of the workflow. Contact atf@atffibre.com.

15. Recommended Test Workflow

The following workflow is recommended for professional certificate preparation and trace review.

1. Confirm OTDR instrument setup and launch/receive conditions before testing.
2. Save original SOR files in a structured project folder.
3. Open the certificate application and load the SOR files.
4. Check route summary, fibre IDs, wavelengths and pass/fail results.
5. Enter job details, OTDR details, logo and sign-off information.
6. Open the Trace Analyser and inspect representative traces.
7. For singlemode fibre, compare 1310 nm and 1550 nm traces where both are available.
8. Preview the Basic certificate for customer sign-off.
9. Preview the Detailed certificate for technical records.
10. Export and review the final PDFs before issue.

16. Support / Contact

For support, licensing or software questions, contact ATf Fibre Ltd.

Contact item	Details
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17. Version Notes / What is New in v1.2.0

- Integrated Analyser button in the certificate application.
- Standalone packaged OTDR Trace Analyser included with the certificate app workflow.
- Multi-SOR trace loading and wavelength comparison for 1310 nm and 1550 nm review.
- Trace show/hide controls with colour-coded loaded SOR list.
- Remove SOR and Clear SORs controls in the analyser.
- Improved certificate preview workflow with Focus Preview mode.
- Fixed certificate footer standard wording built into exported certificates.
- v1.2 manual filename and help workflow support.

18. Legal / Standards Note

ATF Fibre OTDR Certificate is designed to support professional OTDR certificate preparation and fibre test documentation. The software includes built-in workflow logic based on ATF Fibre's developed field standards and supports IEC-61280-4-2 Tier 3 style OTDR documentation workflows. Final acceptance criteria, test setup, launch/receive conditions, and customer requirements remain the responsibility of the test engineer and project specification.

No substitution for project specification

The software supports certificate preparation and trace analysis. It does not replace the project specification, customer acceptance criteria, safety procedures, OTDR manufacturer guidance or competent engineering judgement.

Item	Statement
Software name	ATF Fibre OTDR Certificate v1.2.0
Certificate footer	ATF Fibre OTDR IEC-61280-4-2 Tier 3 Standard Certificate
Copyright	(c) ATf Fibre Ltd 2026
Branding	ATf Fibre Ltd