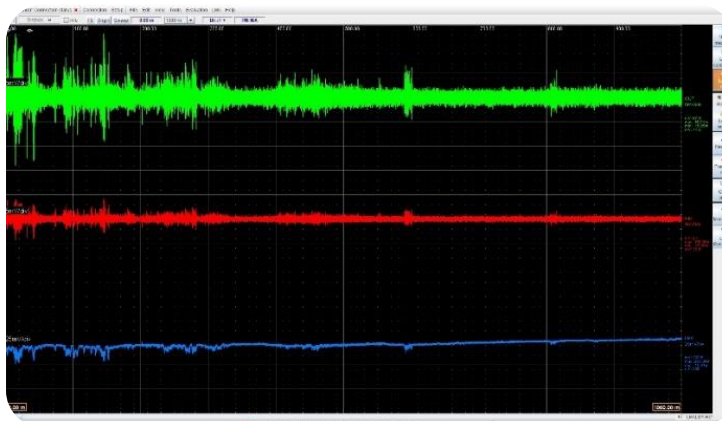


LRM[®]Rope-21 Diagnostic Software



Destination:

LRM[®]Rope-21 Diagnostic Software is used to the visualization of MRT data in real time (during MRT inspection), process the collected MRT data to prepare a report (post-processing), save the data for storage and future use and changes in the operating parameters of the MRT Equipment.

LRM[®]Rope-21 is user-friendly, designed and developed to maximize automatization of the MRT inspection and data evaluation process.

Key Features:

- To start an MRT inspection, users simply create the data file. All MRT equipment settings are done automatically.
- Ability to continue collecting MRT data to an existing file
- A real-time view of the collected MRT data allows to react to significant indications and if necessary, carry out additional measurements/inspections.
- “Distance to MH” feature allows to precisely determine the position of a defect on the wire with reference to the recorded MRT indication.
- Add and edit comments on MRT Traces, in real time and in post process. This allows easy correlation of inspector observations with MRT Traces.
- During inspection as well as in post data processing, functions to change the visible length of the collected data up to 5000m on screen, as well as a slider or zoom on a specific indication, make it easier to navigate through the collected data.
- The most significant LF/LMA indications always remain visible, even when using the highest scale of the visible MRT Traces on the screen.
- The Reference File feature allows the comparison of two MRT traces on a single screen. By comparing traces, you can identify and confirm significant indications from wire rope defects and separate them from false indications. In postprocessing, determine the increase in wear pf inspected wire rope between inspections.
- “Defect Detection” allows automatic localization, evaluation and comparison with the discard criteria of the recorded LF/LMA sensor readings, followed by presentation of the collected results in the form of a table, expressed in percentage of reduction of nominal MCSA.
- MRT Traces Tools functions allow you to work with data, reverse mirroring, automatic cutting according to the change of direction, removing unnecessary data not representing the object under test and much more.

Types of files processed:

- **LRM[®]Rope-21** Diagnostic Software is a dedicated software for the **LRM[®]XXI** Diagnostic System and supports dedicated .lrm files extension.
- Data files from 1000m of MRT inspection take up about 1MB, making it easy to send data via email.

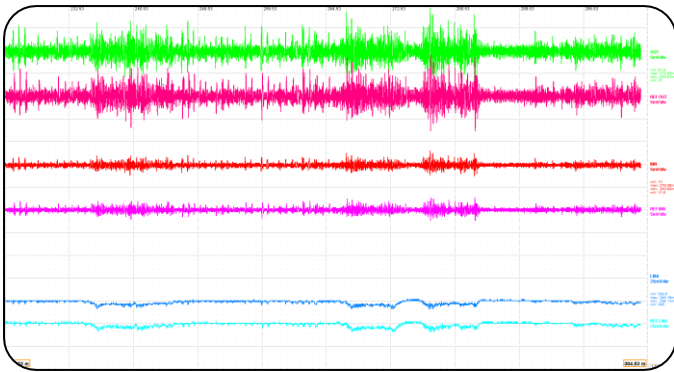
Compatibility & Hardware Requirements:

- **LRM[®]Rope-21** Diagnostic Software operates in a Microsoft Windows environment.
- Every current laptop solution meets the hardware requirements for working with **LRM[®]Rope-21** Diagnostic Software.

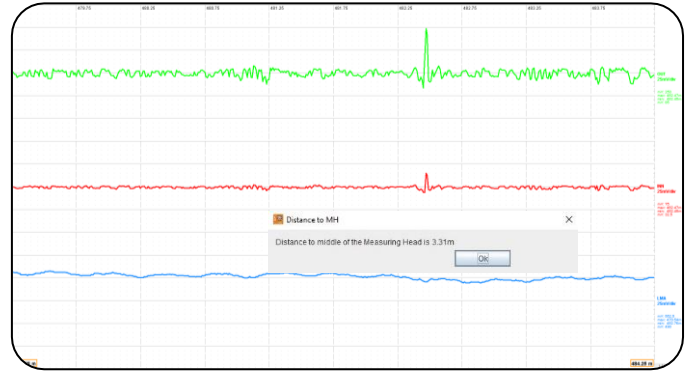
Operation with LRM[®]XXI Diagnostic System:

- Measuring Head types: Compatible with all types of Measuring Heads (MH)
- Recorder types: Compatible with all types of **LRM[®]XXI** Recorders.

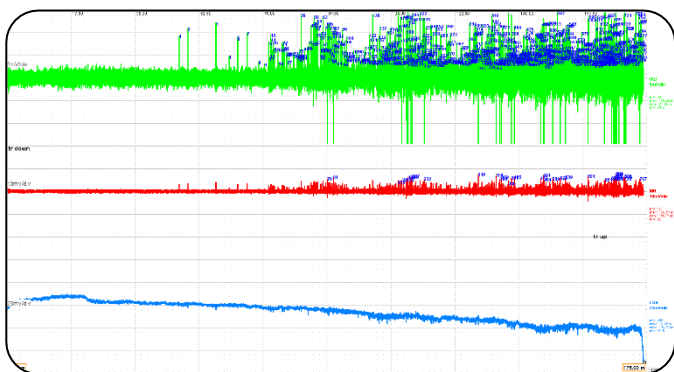
Examples of LRM[®]Rope-21 Diagnostic Software features:



Reference File – Two MRT Traces compared on the screen.



Distance to MH – Localization of defect on the wire rope according to MRT Indication.



Defect Detection – Description on MRT traces of evaluated indications.

Defects found	Name	Channel	Defect type	Priority	Indication at [m]	Indication [mV]	Defect [mm]	Defect [%]	9d %	30d %
31	OUT	OUT	Ext	High	78.34	24	4.20	0.55	1.10	7.42
32	OUT	OUT	Ext	High	79.55	24.5	4.27	0.56	1.12	7.42
33	OUT	OUT	Ext	High	79.72	27	4.74	0.62	2.41	7.88
34	OUT	OUT	Ext	High	79.89	23	4.04	0.52	3.46	7.29
35	OUT	OUT	Ext	High	79.91	31.5	5.51	0.72	3.46	7.29
36	OUT	OUT	Ext	High	80.01	25	4.39	0.57	2.84	7.29
37	OUT	OUT	Ext	High	80.04	21.5	3.77	0.49	2.84	7.29
38	OUT	OUT	Ext	High	80.60	23.5	4.12	0.64	2.84	7.29
39	OUT	OUT	Ext	High	80.39	71.5	12.51	1.82	1.52	8.07
40	OUT	OUT	Ext	High	80.79	25	4.39	0.57	1.11	8.97
41	OUT	OUT	Ext	High	80.86	23.5	4.12	0.54	1.11	8.97
42	OUT	OUT	Ext	High	81.31	34	5.97	0.78	0.78	5.08
43	OUT	OUT	Ext	High	82.10	34.5	6.04	0.78	0.78	4.64
44	OUT	OUT	Ext	High	82.26	35	6.12	0.79	1.72	5.54
45	OUT	OUT	Ext	High	82.69	41	7.16	0.93	1.72	6.17
46	OUT	OUT	Ext	High	83.14	60	10.51	1.36	1.36	10.02
47	OUT	OUT	Ext	High	83.49	39.5	6.93	0.90	0.90	13.94
48	OUT	OUT	Ext	High	83.79	62	10.86	1.41	3.86	14.03
49	OUT	OUT	Ext	High	83.83	38.5	6.74	0.88	3.89	13.70
50	OUT	OUT	Ext	High	84.00	69	12.09	1.57	5.26	13.70
51	OUT	OUT	Ext	High	84.14	61.5	10.78	1.40	4.28	13.70
52	OUT	OUT	Ext	High	84.39	57.5	10.05	1.31	3.64	12.34
53	OUT	OUT	Ext	High	84.52	41	7.16	0.93	4.70	13.84
54	OUT	OUT	Ext	High	84.63	69	10.32	1.34	3.39	15.25
55	OUT	OUT	Ext	High	84.68	49	8.59	1.12	4.87	15.25
56	OUT	OUT	Ext	High	84.80	65	11.36	1.48	2.69	16.54
57	OUT	OUT	Ext	High	85.07	46.5	8.12	1.05	2.91	12.90
58	OUT	OUT	Ext	High	86.24	34	4.90	0.66	3.63	49.00

Defect Detection – Table with identified defects, with MCSA loss evaluation expressed in % and comparison with rejection criteria.