

Eddyfi Technologies
Beyond current

Technical
Specifications

MAGNIFI

Powerful. Efficient. Intuitive.

The market leader for over 10 years, Magnifi® software continues to empower NDT inspectors all over the world with innovative and advanced features.

MULTI-TECHNOLOGY AND FULLY CUSTOMIZABLE

Introduced in 2011, Magnifi software is used by thousands of operators worldwide for the inspection of a wide range of components. Since its first version, it has integrated several technologies and become even more versatile over time.

Advanced heat exchanger tubing inspections with:

- Eddy Current Testing (ECT) and Eddy Current Array (ECA)
- Near-Field Testing (NFT) and Near-Field Array (NFA)
- Remote-Field Testing (RFT) and Remote-Field Array (RFA)
- Magnetic Flux Leakage (MFL)
- Internal Rotary Inspection System (IRIS)

Advanced surface inspections with:

- Eddy Current Array (ECA)
- Tangential ECA (TECA™)
- Magnetic Flux Leakage Array (MFLA)

Magnifi incorporates several layouts, calibration processes, and display options to tailor parameters for the right tools for each inspection. Truly flexible, the software also enables the import and creation of custom probe setups when required.

Cutting-edge electromagnetic acquisition, analysis, and reporting software, Magnifi is a constantly evolving platform boasting powerful data processing tools, multi-technology support, easy report generation, and an intuitive graphical user interface.

FUTUREPROOF FEATURES IN AN EVOLUTIVE PLATFORM

The power, efficiency, and intuition of Magnifi is undeniable

A THOUGHTFUL INTERFACE

Magnifi has been designed to facilitate the work of its users. Its interface is modern and includes ribbons that group icons in a logical and efficient way. The software is divided into two parts: the Backstage, which allows for adjusting more general settings such as preferences and file names, and the Frontstage, which is dedicated to data acquisition and analysis.

QUICK SETUP

Creating a setup has been made effortless with the implementation of a user-friendly step-by-step wizard. By simply selecting the parameters of the component requiring inspection, the software will recommend the appropriate frequencies and filters, as well as provide suggestions on how to calibrate and build accurate calibration curves.

Magnifi automatically identifies surface array probes as soon as they are connected to the instrument, facilitating the selection of the appropriate setup and inspection parameters. Figure 1 shows the first page of the Setup Wizard, enabling users to set up the component for both surface and tubing inspections.

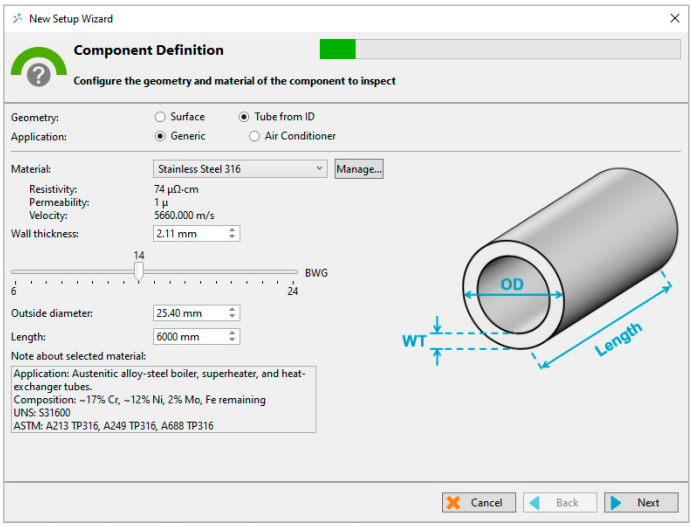

Figure 1: First page of the Setup Wizard allows the user to input the component specifications for both surface and tubing inspections..

AUTOMATIC RECORDING FOR TUBING INSPECTION

Streamlining the data acquisition and recording process, the software can seamlessly activate these functions automatically as soon as the probe enters or exits a tube. This eliminates the need for manual activation, saving time and effort for the data acquirer. To further enhance usability, Magnifi displays the real-time count of scanned tubes in large, easily visible print. This allows users to conveniently keep track of the progress even when they are away from the screen.

KEYBOARD SHORTCUTS

Frequently used functions, from acquisition to analysis, can be performed using keyboard shortcuts. Magnifi 5 provides the capability to customize keyboard shortcut configurations such as entering the desired indication using the selected channel and measurement method.

INDICATION DETECTION

The Indications module empowers users to customize detection thresholds by defining various zones or waveform types. These detection zones can be applied to both conventional channels and C-scans, allowing for adjustments directly on the Lissajous interface as shown in Figure 2. For C-scans, whenever an indication reaches the specified threshold, it is automatically boxed in and presented in a list. By clicking on any given indication, the cursors are automatically fine-tuned, facilitating more precise signal analysis.

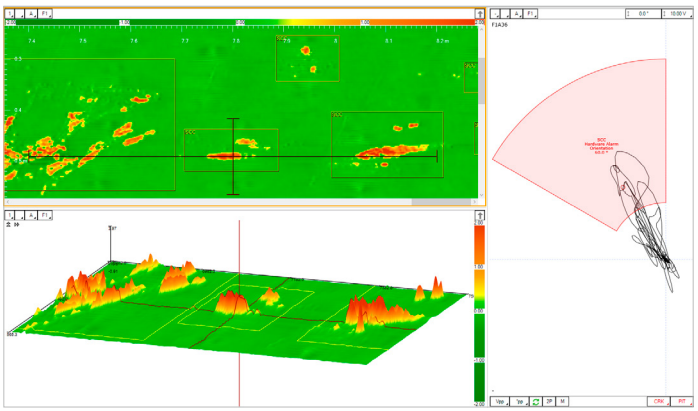

Figure 2: In the impedance plane, the red quadrant triggers a detection when the signal enters it. Calibration allows detecting only the desired indications. The C-scan's boxes around the indications are automatically added based on the detection threshold.

ADVANCED SIGNAL PROCESSING

In combination with the industry's highest resolution probes, the software incorporates 2D and 3D C-scans, making analysis more intuitive and results easier to interpret. Up to 256 raw channels can be generated by sequential coil activation and displayed all at once in a single C-scan tailored to specific detection needs.

Magnifi makes it possible to use a wide variety of tools to process raw data as shown in Figure 4. Technology-specific tools have been integrated into the software such as:

- Real-time filters
- Automatic detection thresholds
- Sizing curves and overlays
- Superimposed channel display
- Customizable info fields
- Subtraction cursor and much more.



Figure 3: Operator performing in-field data analysis during a pipeline inspection using a Spyne™ ECA probe, Reddy® instrument, and Magnifi GO software.

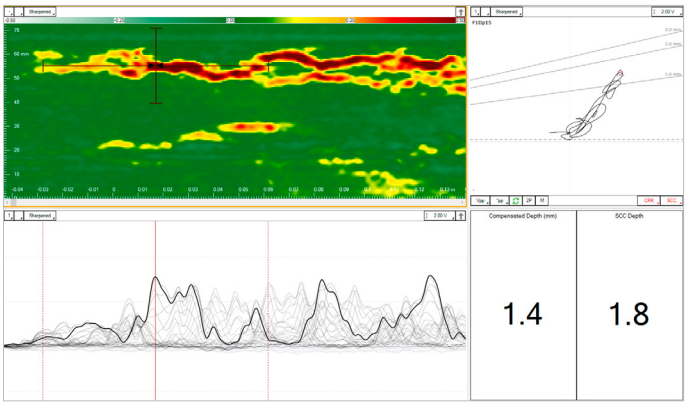

Figure 4: Typical Magnifi PRO interface for ECA surface inspection showing a high-resolution C-scan with its associated impedance plane, superimposed amplitude strip charts, and two customizable info fields providing depth measurements of the detected indications.

CREATE REPORTS IN A FEW SIMPLE STEPS

Multiple report templates can be chosen and associated with the report entries made in the software. Just a few steps are necessary to generate a report with customizable fields, a component picture, a defect list, informative graphs, and company logo. Figure 5 presents a sample report generated by Magnifi GO-AC for a non-ferrous tubing inspection.

Analysis Report

Eddyfi Technologies

Inspection Summary

Classification	Description	# of Tube	% of Component
# Tube Tested	Total number of tested tubes	81	100.0%
NDD	No defect detected	0	0.0%
< 10%	Tubes reported in range < 10% wall loss	1	1.2%
10% - 19%	Tubes reported in range 10% - 19% wall loss	0	0.0%
20% - 29%	Tubes reported in range 20% - 29% wall loss	0	0.0%
30% - 39%	Tubes reported in range 30% - 39% wall loss	0	0.0%
40% - 49%	Tubes reported in range 40% - 49% wall loss	0	0.0%
50% - 59%	Tubes reported in range 50% - 59% wall loss	7	8.6%
60% - 69%	Tubes reported in range 60% - 69% wall loss	19	23.5%
70% - 79%	Tubes reported in range 70% - 79% wall loss	17	21.0%
80% - 89%	Tubes reported in range 80% - 89% wall loss	17	21.0%
> 90%	Tubes reported in range > 90% wall loss	20	24.7%

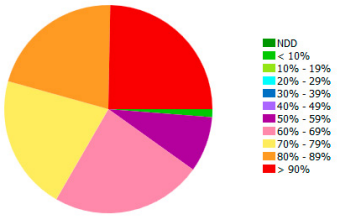

Figure 5: Simple report generated after a non-ferrous heat exchanger inspection using a Reddy-AC and Magnifi GO-AC.

INTRODUCING ARTIFICIAL INTELLIGENCE (AI) FOR NON-FERROUS HEAT EXCHANGER INSPECTIONS

ARTIFICIAL INTELLIGENCE FOR EDDY CURRENT TESTING

Using an innovative patent-pending methodology incorporating AI neural networks, the AI-ECT module 4 has demonstrated a probability higher than 98% of detecting significant indications[1], [2], and a probability higher than 98% of accurately detecting tubesheets and support plates[2] during data analysis. The tool centers the cursor and marks the beginning and end of each indication, as presented by the red cursors in Figure 6, thereby significantly expediting the overall analysis process. AI findings are suggested potential indications; they are not intended to be automatically reported. The ultimate responsibility lies with a certified analyst to make informed decisions and determine the appropriate sizing for reported indications.

1 Significant indications in the test database correspond to signal vertical amplitude at 50% of calibration hole signal or signal vertical amplitude between 25-49% of calibration hole with 40% depth.

2 90% confidence level.

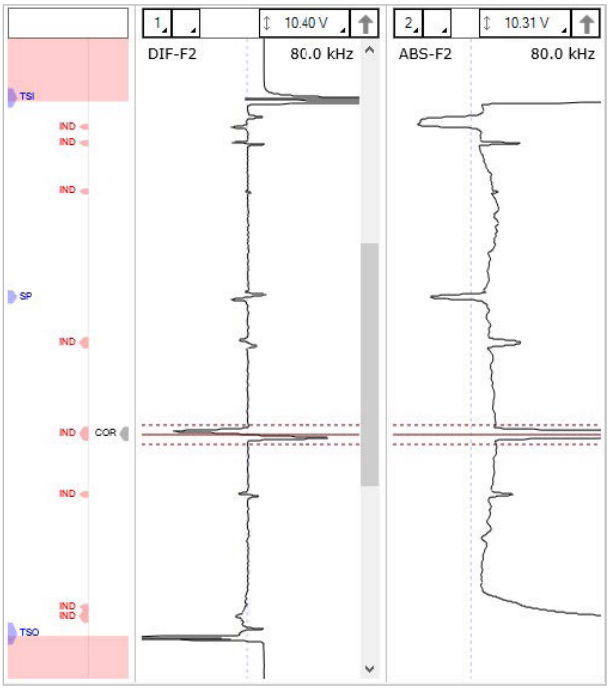

Figure 6: AI-enabled ribbond at the left showing landmarks detected in blue and potential indications in red.

COLLECT SUPERIOR DATA QUALITY

Specific tools have been integrated into Magnifi 5 to ensure high-quality data collection. The artificial intelligence module accurately identifies landmarks and includes comprehensive data quality validation to detect and flag potential issues. This tool is capable of identifying where the complete length of the tube has not been acquired, instances of signal saturation, and any occurrence of broken channels on the probe.

INCREASE PRODUCTIVITY BY UP TO 50%

The benefits of AI findings are enhanced by the introduction of tools developed to help analysts quickly find the critical information they want to report:

- **Defect grouping:** Identifies the most relevant indications to report based on user-defined criteria as shown in Figure 7. Additionally, users can hide "unclassified" indications to focus on specific groups.
- **Tube list sorting:** Prioritizes tubes with the highest potential indications to the top as shown in Figure 8.
- **Filtering:** Displays or hides AI finding categories (no indication, with indications, data quality validation results, and others) as shown in Figure 8.
- **High precision automatic cursor positioning tool:** Speeds up defects entry and landmarks identification.

With the combination of these tools, the AI module has demonstrated a productivity gain of up to 50% when analyzing data from a typical heat exchanger, in addition to increasing confidence that no major defects are left behind.

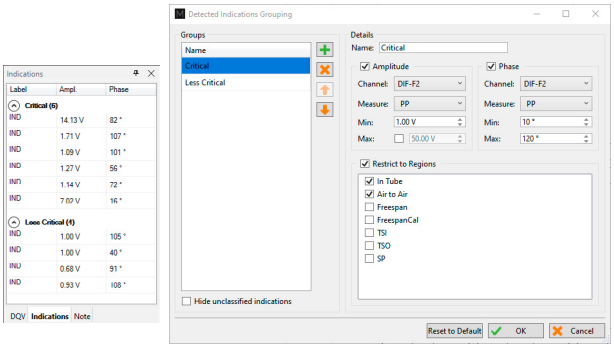

Figure 7: Grouping tool enabling quick identification of critical defects.

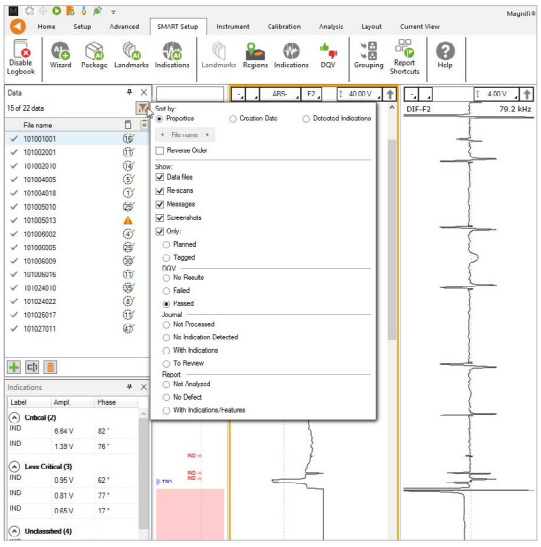

Figure 8: Filtering and sorting capabilities when AI-ECT detection is activated during analysis.

EFFICIENT AND FLEXIBLE CLOUD-BASED LICENSING SYSTEM

Software licenses are now activated in seconds and can be easily shared within a team

STD AND PRO



The Standard (STD) version of Magnifi desktop supports up to five technologies in conventional modes: ECT, RFT, MFL, NFT, and IRIS. The Professional (PRO) version enables access to advanced inspections with array sensors for RFA, NFA, TECA and MFLA.

Magnifi STD and PRO empower ECT tubing inspections with the artificial intelligence module introduced in Magnifi 5.

GO AND GO AC



Packaged with the latest technology, the Reddy® system combines high portability with an intuitive user experience. For surface inspections with ECA and MFLA, Reddy is driven by Magnifi GO, the embedded version of Magnifi desktop.

For ECT bobbin and Air Conditioning (AC) tubing inspections, Magnifi GO AC offers integrated automated acquisition sequences and advanced analysis capabilities for on-the-fly reporting.

IGNITE AND CONTROL



Designed for the Ignite surface ECA instrument, Magnifi Ignite is a streamlined version of Magnifi with a redesigned, easy-to-learn interface and enhanced automation tools, including a one-button calibration sequence, real-time filtering, and real-time alarms. Its companion application, Magnifi Control, is a minimalist, headless acquisition engine built to sustain continuous 24/7 automated inspection with exceptional stability. Together they scale surface ECA from manual setup to fully automated production.

CLOUD-BASED LICENSE KEY



Operators can maximize utilization and flexibility with Eddyfi Technologies' cloudbased licensing system. Software licenses are now activated in seconds and can be easily shared among a team. Gone are the days when the dongle could get lost, broken, or required to be shipped weeks in advance with the equipment.

CPN



Built with the same intuitive interface, Magnifi Companion (CPN) allows desktop analysis of any data acquired with the Reddy unit. Analysts can be up and running in next to no time, with larger data layouts at their fingertips. Whether CPN is used to plan and setup inspections for several instruments or to review field data, operators can take full advantage of Reddy's industry leading capabilities.

GET CONNECTED

APP

zoom

Providing new levels of efficiency and collaboration, Reddy and Reddy-AC can benefit from the connectivity tools. Transfer and share data with colleagues through OneDrive. Share your screen with remote analysts through Zoom. Add pictures and notes to indications and scans through the Eddyfi Mobile App. These constantly evolving tools are meant to ensure that users are on top of their game.

SPECIFICATIONS

GENERAL	STD	PRO	GO	GO AC/E	CPN
Control acquisition	•	•	•	•	
Reporting capabilities	•	•	•	•	•
Create, load, and save Ectane setup and data files	•	•			
Create, load, and save Reddy setup files			•	•	•
Load Reddy Surface ECA and MFL data files		•	•		•
Load Reddy AC data files	•	•		•	•
APPLICATIONS					
ECT inspection for surface and tubing applications	•	•	•	•	
Surface inspection with ECA		•	•		
Surface inspection with TECA Sharck and Sharck HR		•	•		
Surface inspection with MFLA		•	•		
Tubing inspection with RFT, NFT, and MFL	•	•			
Tubing inspection with IRIS	•	•			
Tubing inspection with array probes (DefHi®, NFA and RFA)		•			
Tubing automated inspection with Probot	•	•			
TubePro active link	•	•			
CONFIGURATION					
Sizing curves review and customizable layouts modification	•	•	•	•	•
Advanced channel processing	•	•			
Software development kit (SDK) compatibility		•			
Automatic signal detection boxes for conventional and array inspection	•	•	•		•
AI-ECT landmark detection for non-ferrous tubing	•	•			
AI-ECT full tube length DQV test for non-ferrous tubing	•	•			
AI-ECT defect detection for non-ferrous tubing	•	•			
SCAN MODES					
Linear, single axis	•	•		•	
Tubing, rotating probes (IRIS)	•	•			
Tubing, single-pass array; tubing, rotating array		•			
Surface, single-pass array and raster scans (single-channel & array probes)		•	•		
VIEWS					
Lissajous (impedance plane), strip chart, information	•	•	•	•	•
Voltage plane for RFT	•	•			
A-scan for IRIS; projection for IRIS	•	•			
2D C-scans		•	•		•
3D C-scans		•			•

VERSION	WINDOWS® COMPATIBILITY	*NOTE
Magnifi 3.5	Windows 7, Windows 8 and Windows 8.1 (32 and 64-bit editions)	Not tested on Windows 10 nor Windows 11
Magnifi 4.2 to 4.6	Windows 7, Windows 8 and Windows 8.1 (32 and 64-bit editions)	Not tested on Windows 10 nor Windows 11
Magnifi 4.7 and 4.8	Windows 8.1 and Windows 10 (32 and 64-bit editions)	Not tested on Windows 11
Magnifi 5.0 to 5.4	Windows 10 and Windows 11 (64-bit editions)	Unsupported on Windows 8.1 (64-bit). Will not work on Windows 32-bit.
Ignite and Control	Windows 11 (64-bit edition).	

The information in this document is accurate as of its publication. Actual products may differ from those presented herein.
© 2026 Eddyfi Canada, Inc., Eddyfi, Cypher, and their associated logos are trademarks or registered trademarks of Eddyfi Canada, Inc. in the United States and/or other countries. Eddyfi Technologies reserves the right to change product offerings and specifications without notice.