

## WS98™ Eddy Current PCB Technical Specification

The IZFP WS98 Eddy Current board is designed for PC-aided eddy current testing. In combination with suitable software, the WS98 is a complete multi-frequency eddy current instrument, and by using the modular design concept, it permits multi-channel operation with a multitude of sensor and frequency channels. The broad analog bandwidth and subsequent numerical filters allow for contemporary signal processing algorithms and new testing concepts with high-speed multiplexing. Powerful data processing, real-time numerical filtering, and regression integrations are provided by the onboard digital signal processor (SHARC).

All hardware and firmware functions are software controlled. The software package, running under Windows NT®, consists of three software components: 1) PC software for setup and control of the eddy current system; 2) Master software managing the slave-specific ET parameters, handling of the time-multiplexing, processing of the SHARC data, and data transfer to the computer; 3) Slave software providing digital data filtering (data reduction, high pass, low pass, regression analysis), ultra-fast multiplexing of sensors and/ or test frequencies, setup of hardware functions (e.g., frequency generation, gain, A/D conversion, etc.), communication with data interfaces (serial port, USB, etc.), and diagnostics for hardware/firmware functions.

### Features

- Modular hardware and firmware design
- Extensive use of numerical processing replacing conventional analog circuitry
- High long-term stability, dynamics, and reproducibility of the ET signals
- Test frequency ranging from 10 Hz to 10 MHz (25 MHz optional)
- A/D conversion at 16 bit (250 kHz cycle frequency)
- Time-multiplexing mode for sensors and/or frequencies at 8 kHz above 100 kHz test frequency (300 Hz at 500 Hz test frequency)
- High and low pass digital filters
- Online signal processing in multi-frequency mode for noise suppression and calibration of inspection targets
- Active, in-line cable and sensor drivers for sensor-to-instrument distance of more than 5 yards
- Automatic diagnostic of hardware functions including error codes of board(s) and board component(s)

### Options

- External single-board and multi-board system, serial, parallel, or USB interface
- Compact PC-integration with backplane BUS interface
- PCI-BUS single or multi-board system (currently under development)

