



**LinearDimensions**  
SEMICONDUCTOR



## LNDA003-PEAL PEAL Signal Extraction System (PATENTS PENDING)

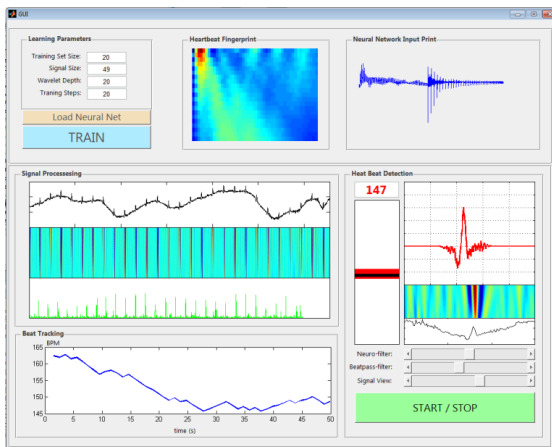
### GENERAL DESCRIPTION

The LNDA003 is a full software suite of algorithms and GUIs designed to extract complex waveforms from noisy environments, where the waveform being extracted may be much smaller in magnitude and in the same spectrum as multiple noise objects.

The LNDA003 utilizes the latest in algorithmic analysis and search engine technology to learn the characteristics of the signal of interest, generally by showing the algorithm examples of such waveforms, and it then generates multi-level strategies for finding and verifying that it is identifying and extracting only those signals.

The software suite is made up of five primary modules: i) FILTER which includes a suite of software filters for removing unwanted bands; ii) AGC which works with the other modules to produce a "smart" automatic gain which will optimize the amplitude of the signal of interest while "peeling" away noise components; iii) WAVD which is extraction tool using multiple techniques including wavelets to find desired signals within noisy environments, even where the noise is in the same spectrum; iv) NNWAV is suite of error minimizing gradient search algorithms including wavelet neural networks with multiple smart abstraction highlighting and proprietary Linear Dimensions wavelets; v) GUIs for both "teaching" including graphical manipulation and batch learning, as well as signal manipulation to help determine the optimal algorithms for extraction.

### CUSTOMIZED DASHBOARD



### FEATURES

- Linear Cloud Service, uC or PC solutions
- Mobile app development for Cloud available
- Signal extraction system includes all components required to implement high performance signal extraction
- FILTER: Up to 8<sup>th</sup> order LP & HP filters, and baseline extraction
- AGC: Advanced noise stripping AGC
- WAVD: Multiple algorithm based signal analysis extraction state machine
- NNWAV: Neural wavelet network based learning algorithms
- NNWGUI: Learning GUI
- AGUI: Analysis GUI
- Acceleration methods to allow use with portable microcontrollers
- Power management subsystem to reduce power in portable systems
- Runtime software and support for popular microcontrollers including TI MSP430
- Noise may be in the same spectrum

### APPLICATIONS

- Portable heart rate equipment
- Portable fitness & wellness products
- Non-critical diagnostics
- Vibration measurement equipment
- Instrumentation
- Bridge amplifiers
- Pressure sensors
- Weigh scales
- Sensor amplifiers

### EXAMPLE OUTPUT

