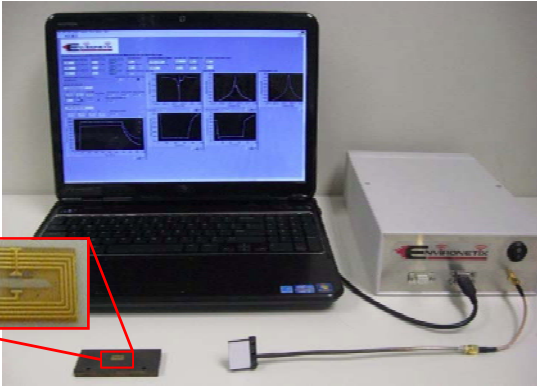




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[www.vironetix.com](http://www.vironetix.com)

## WIRELESS MICROWAVE ACOUSTIC SENSOR SYSTEMS FOR HARSH ENVIRONMENTS



- temperature range: 150°C (300°F) to 900°C (1650°F)
- accuracy:  $\pm 10^\circ\text{C}$  over full range
- resolution: within  $\pm 5^\circ\text{C}$
- long term drift:  $< 1^\circ\text{C} / 150$  hours
- operating life:  $> 500$  hours
- insensitivity to pressure: 0 to 750 psi with  $< 1^\circ\text{C}$  error
- operating frequency: 100 MHz to 1 GHz
- sampling rate: 1 Hz to 100 kHz
- rotation: up to 53,000g's

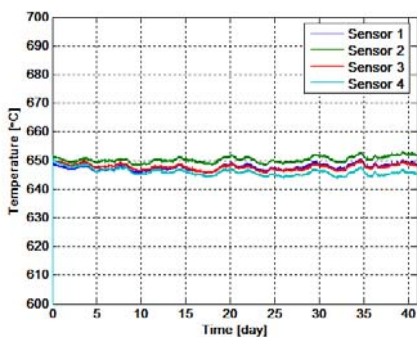
### EVHT-100 WIRELESS TEMPERATURE SENSOR SYSTEM

- ✓ Stable and reliable operation up to 900°C (1650°F)
- ✓ Multiple sensors with integrated RF antennas
- ✓ Wireless RF interrogator electronics
- ✓ Custom installation on rotating or static parts
- ✓ User-friendly data output on laptop PC
- ✓ Proprietary sensor packaging and attachment

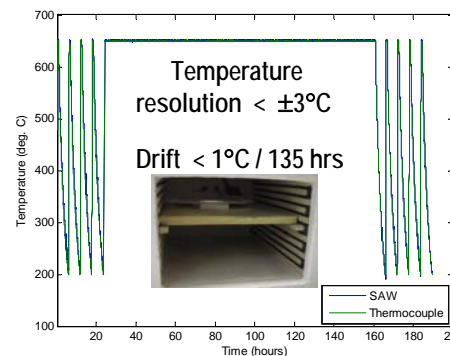


ATTACHMENT ON ROTATING AND STATIC COMPONENTS

## PERFORMANCE OF ENVIRONETIX EVHT-100 SENSOR SYSTEM



STABLE AND RELIABLE MULTI-SENSOR DATA

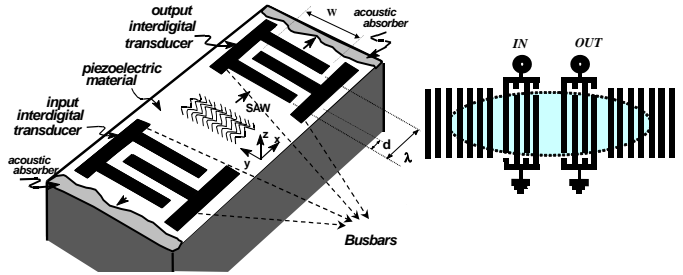
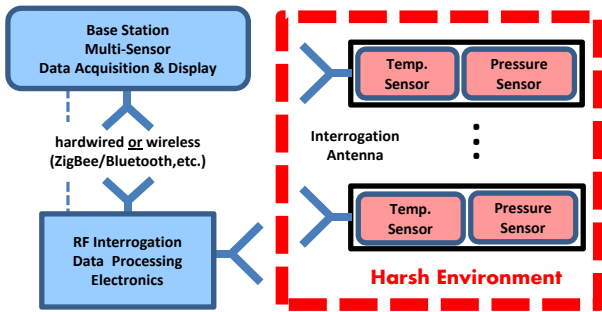


ACCURACY WITH REPEATED CYCLING



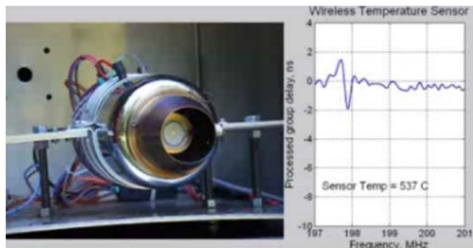
VALIDATED IN FURNACES, TURBINE ENGINES, AND POWER PLANT WATER WALLS

# SURFACE ACOUSTIC WAVE (SAW) SENSOR TECHNOLOGY



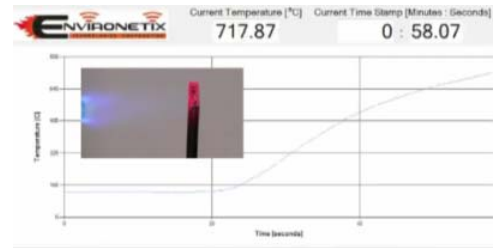
## WIRELESS INTERROGATION WITHIN HOT ZONE

- Integrated sensor-antenna arrays
- Passive wireless (battery-free) sensor operation
- Harsh environment RF interrogation electronics
- Real time data sampling of multiple sensors



## ACOUSTIC WAVE PROPAGATION ON SAW SENSOR

- Langasite ( $\text{La}_3\text{Ga}_5\text{SiO}_{14}$ ) piezoelectric crystals
- Typical device size ~3mm x 1mm x 0.5mm
- Stable nanocomposite high T transducer electrodes
- Passivation coatings for long term sensor protection



## WIRELESS REAL TIME SENSOR DATA ACQUISITION FOR ROTATING AND FIXED PARTS

# ENVIRONETIX SENSOR SYSTEMS ARE APPLICABLE IN MANY HARSH ENVIRONMENTS



COMBUSTION ENGINES



POWER PLANTS



INDUSTRIAL PROCESSES



HIGH T PROCESSING



SPACE VEHICLES



GAS/OIL EXTRACTION



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Wireless Sensor Systems -- Built for Customer Needs

*Contact us to discuss sensor array size, interrogation range, sensor attachment location and profile, and user interface for your specific application*