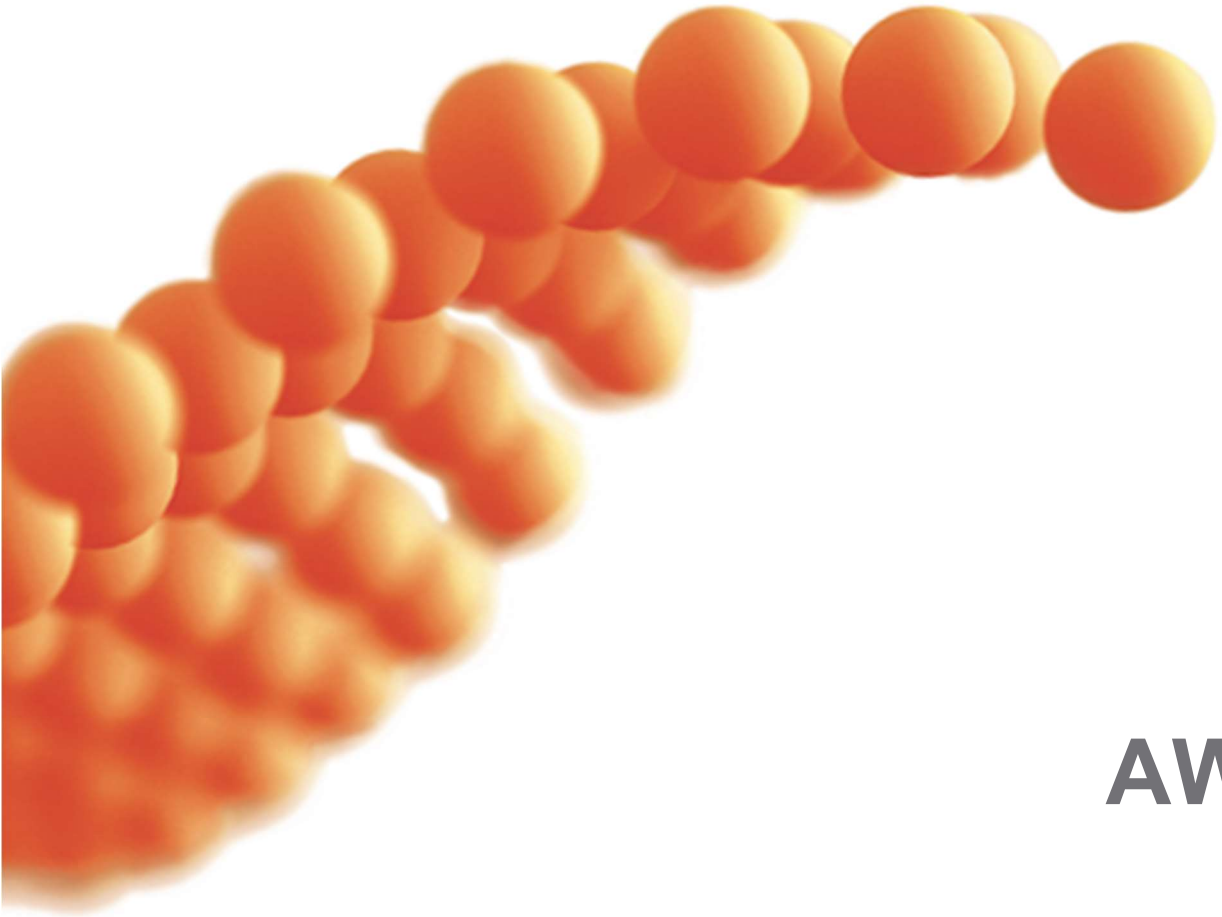

AWS X1

AWSensors
Scientific Technology

AWS X1 Single Channel

Features

X1 is a single channel, advanced acoustic sensing system that offers:

- High sensitivity & low limits of detection.
- Fast acquisition rate.
- Modular design enabling classical and High-Frequency QCMD and LOVE-SAW sensor measurements, and remote cell placement.
- Comfortable handling and robust measurements with quick-lock measurement cells.
- Instrument control and data acquisition via Ethernet.
- Integrated potentiostat control for simultaneous QCMD and electrochemistry applications.
- Optional fluidics module with integrated software control.
- Basic data analysis package and export functions for third-party software analysis.
- Space-saving and light-weight design.

Equipment configurations

X1 is a modular system that allows flexible solutions, adaptable for various budgets and applications.

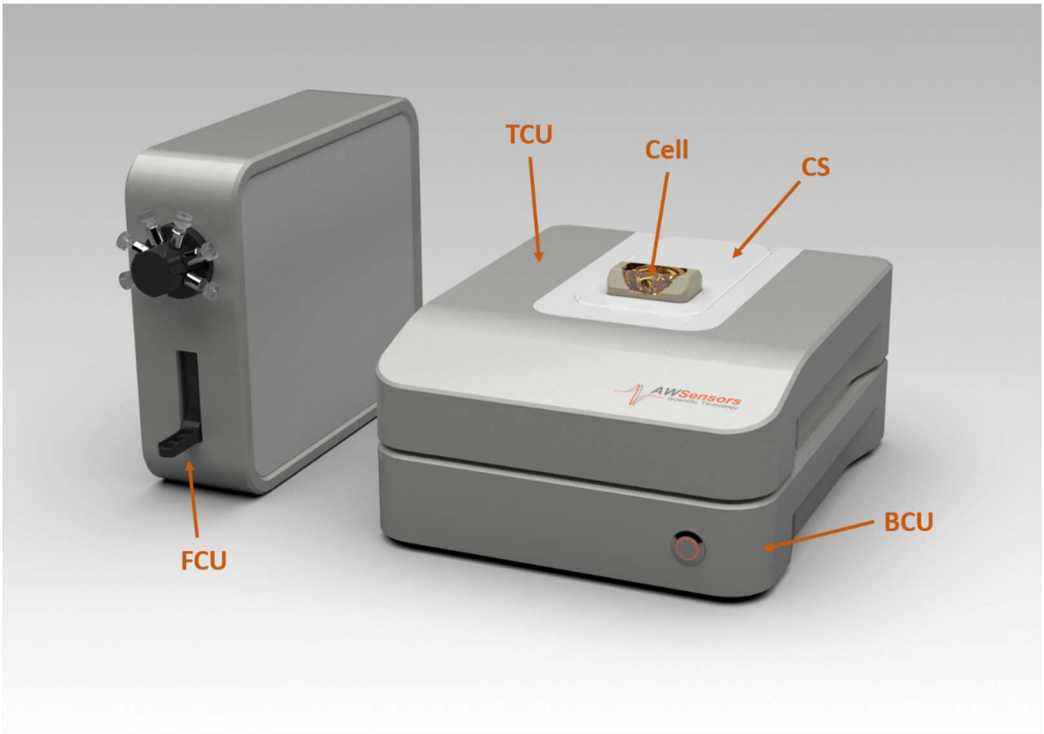

Figure 1 - Modules of the X1 system. BCU: Base Control Unit; CS: Cell Station; Cell; TCU: Temperature Control Unit; FCU: Flow Control Unit.

Several configurations are possible:

- The minimum configuration consists of Base Control Unit (BCU), cell station (CS) and cell.
- Advanced options include integrated temperature control (TCU) and/or a fluidics module (FCU).

The Cell Station can be detached for remote placement (e.g., in an oven, a glovebox, a climate chamber) using an optional cable kit.

Technical Specifications

General operation	
Number of cell units (channels)	1
Type of sensors	QCM, AWS HFF-QCM, AWS Love-SAW
Measurement modes	Tracking mode (single overtone and multiple overtones)[1] High Resolution mode (single overtone and multiple overtones)[2]
Number of overtones	Up to 7 (fundamental + 6 overtones)
Operation frequency range	4 MHz – 160 MHz
Max. Frequency resolution[3]	0.1 Hz
Frequency accuracy[3]	± 0.5 Hz
Temperature control range[4]	15 °C – 45 °C
Temperature stability	± 0.05 °C
Maximum time resolution[5]	250 samples per second
Normal mass sensitivity in air[6]	8 pg/cm^2
Normal dissipation sensitivity in air[6]	1.71x10^{-10}
Normal mass sensitivity in liquid[6]	0.6 ng/cm^2
Normal dissipation sensitivity in liquid[6]	3.5x10^{-8}
Dimensions, (H x W x D)	- Stacked system (BCU+TCU+CS): 150 mm x 220 mm x 260 mm - Elements: BCU: 55 mm x 220 mm x 260 mm TCU: 60 mm x 220 mm x 260 mm CS: 42.5 mm x 72.5 mm x 155 mm FCU: 200 mm x 70 mm x 260 mm
Weight	BCU: 3.00 Kg TCU: 3.50 Kg CS: 0.75 Kg FCU: 3.00 Kg

[1] Tracking mode provides the full impedance spectrum of the sensor around resonance frequency.
[2] Patented Fast & High-Resolution single frequency point measurement.
[3] Signal generator.
[4] At room temperature 24°C ± 1°C.
[5] High-Resolution mode at single frequency.
[6] For QCM 5 MHz, measured in Tracking Mode on 7 overtones, with no averaging.

Specifications are subject to change without notice.

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