

Designed by ZIVE LAB

Impedance Monitor ZIVE Zcon



Designed to interface to an electronic load
or external potentiostat/galvanostat

For
Fuel Cell
Battery
Supercapacitor
Solar Cell

Feature

- For versatile AC impedance experiment using external electronic load or Potentiostat/Galvanostat
- 2 signal input channel(current and voltage)/1 signal output for sine wave
- A flexible frequency generator/analyzer
- Generate various waveforms (e.g. Sinusoidal etc.)
- Designed for spectrum analysis in the electro-chemical field
- Simulation and fitting with ZMAN™
- High current application with external load and/or potentiostat/galvanostat
- Software controlled function
- Graphic-based user-interface
- Dual real time graph (Bode, Nyquist, etc.) during measurement
- Free analysis using ZMAN impedance analysis software without license code

Zcon™ impedance analyzer is a spin off model from Z# multichannel impedance monitor. This model is for single channel application only.

Zcon™ provides all tools for the application of fuel cell stack, battery pack, and general electrochemical study requiring EIS measurement using external electronic load or potentiostat/galvanostat.

By employing electronic load, **Zcon™** can be used to determine the efficiency of fuel cell and anodic/cathodic process mechanisms by calculating impedance with the measurements of I and E at a given frequency.

The complete system is software-controlled and all functions such as ranging, calibration, and measurements can be automated.

Supporting External Load/Potentiostat

- TDI dynaload RBL488 series
- WonATech WEL Load
- ED2 potentiostat/galvanostat
- 3rd parties potentiostat/galvanostat

Other models might need to set some parameters by manually. Please contact with your regional distributor about other 3rd parties products' availability with **Zcon™**

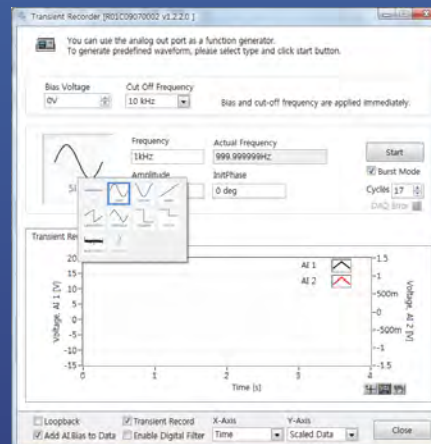
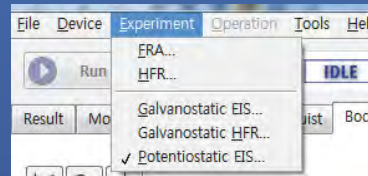
Software (Z100 Navigator)



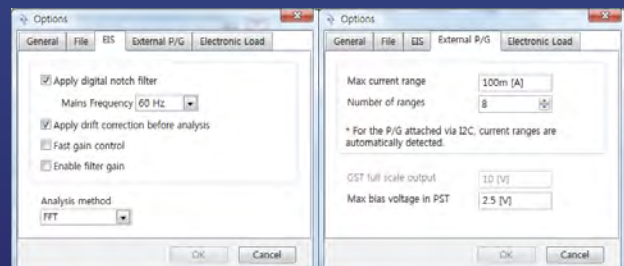
Z100 navigator is **Zcon™** control software. This can be used with external potentiostat/galvanostat or electronic load by setting for impedance measurement or waveform generator.

List of Impedance Techniques with Zcon

- Frequency response analyzer (FRA)
- High frequency resistometry (HFR)
- Galvanostatic electrochemical impedance spectroscopy (GEIS)
- Galvanostatic HFR (GHFR)
- Potentiostatic EIS (PEIS)

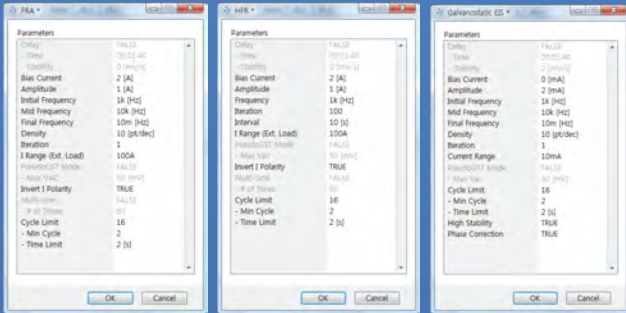


Transient recorder (waveform generator)
DC/Sine/Cosine/Ramp/Sawtooth/Square/Triangular/Pulse/
Multi-tone/ Arbitrary

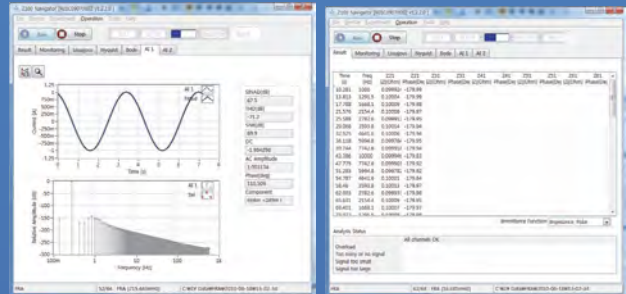


Environment setting menu

Impedance Monitor Zcon

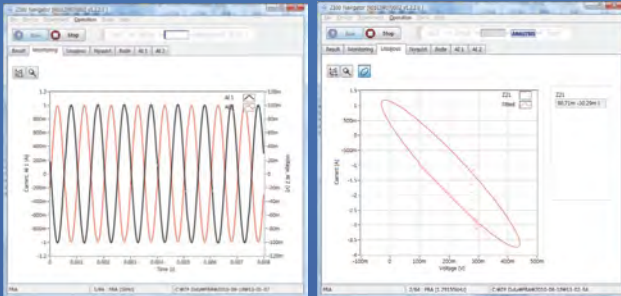


Parameter setting for each techniques



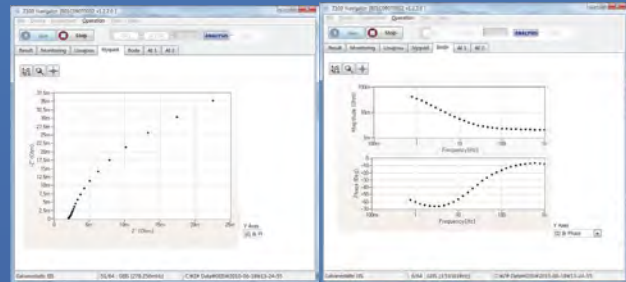
AC Signal Input (power spectrum)

Result



Monitoring

Lassajous plot



Real time Nyquist plot

Real time Bode Plot

ZMAN™ will be supplied for analysis of Zcon data at free of charge. Please refer to ZMAN introduction.

System Configuration

Hardware (controller), software, USB cable, Power adapter

Specification

Analog Out
of channels
Configuration
Maximum Output
Voltage Offset
DC bias

AC Waveform
Predefined Type

Frequency Range

Frequency Accuracy
Frequency Stability

Amplitude
Post-gain/Attenuation

as Signal Generator

1

Single-ended

-11.0 to +11.0 V (DC + AC)
< 0.5 mV, software corrected zero

Range	Resolution
0.0 to 5.0 V	0.076 mV
0.0 to +10.0 V	0.153 mV
-5.0 to +5.0 V	0.153 mV
-10 to +10.0 V	0.305 mV
-2.5 to +2.5 V	0.076 mV
-2.5 to +7.5 V	0.153 mV

DC, Sine, Cosine, Ramp,
Sawtooth, Triangle, Square, Pulse, Multi-tone

1 uHz to 100kHz resolution:

5000 steps/decade

Typ. 75 ppm, Max ±200 ppm

< 2 ppm @ 1 kHz

< 20 ppm @ 10 kHz

< 200 ppm @ 100 kHz

< 2000 ppm(0.2%) @ 1 MHz

1 mVpp to 2 Vpp

-44 dB to +40 dB with 6 dB step,
automatic gain selection

Impedance Monitor Zcon

Reconstruction Filter

10 to 150 kHz 8th order low pass filter with 10kHz step or By-Pass
< 0.5 %

Gain Error

Analog In

of channels
Configuration

Max. Common Mode Voltage

Voltage Offset
Bandwidth

Input Impedance

Pre-Attenuation

Post-gain/Attenuation

Anti-Aliasing Filter

as Frequency Analyzer

1 for current input and 1 for voltage input
Differential

± 100 V(ZconH) ± 10 V(Zcon)

< 0.5 mV, software corrected zero
550 kHz

110 kOhm

-20dB ($\times 0.1$)

-44 dB to +40 dB ($\times 100$) with 6 dB step or $\times 200$, $\times 400$, $\times 800$, $\times 1600$

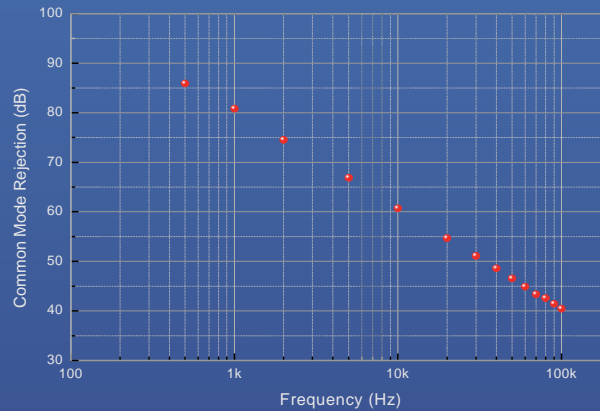
10 to 150 kHz 8th order low pass filter with 10 kHz step or by-Pass

> 80 dB @ 1 kHz,

> 60 dB @ 10 kHz,

> 40 dB @ 100 kHz (refer to the below graph)

CMRR



Expansion Ports

I2C in & out

Reserved for future

General

Interface

Power

USB 2.0 high speed
External 50W AC-DC adapters,
+5/+15/-15VDC
with AC Input of 100 to 240V,
2A, 50/60 Hz

Operation Condition

0 to 50 °C, 0 to 90% humidity
(non-condensing)

Warranty

1 year parts and labor on defects
in materials and workmanship

Designed by

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ISO 9000 & ISO 14000 Qualified