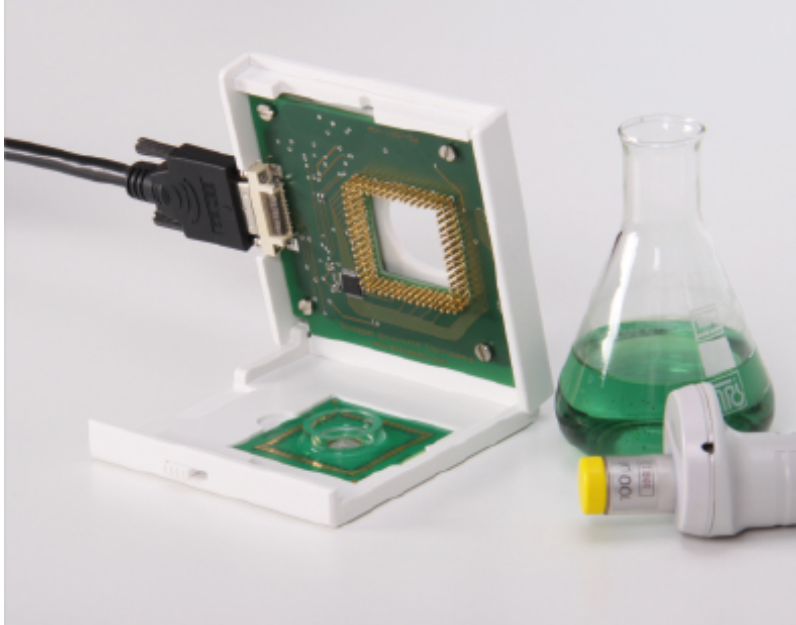


# 1 MEArack

## 1.1 Which products are covered by this part of the manual

This manual is valid for:

- MEArack for Sciospec Impedance Analyzers



## 1.2 Technical Specification

- ⓘ All specifications are stated for a operating at temperatures of 0°C to 40°C unless specified otherwise.  
Warm-up time must be greater than or equal to 30 minutes after power on to comply with all specifications.

### ⚠ Maximum Ratings

Stresses above the listed absolute maximum or maximum ratings may cause permanent damage to the device. This is a stress rating only; functional operation of the device at these or any other conditions above those indicated in the operational section of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

## 1.2.1 Measurement specifications

### ⚠ measurement port protection



Be aware that the measurement terminals (Counter, Reference, Working Sense and Work Electrode Terminals, including the measurement terminals of the *ExtensionPort*) are very sensitive to electrostatic discharge, over-current and over-voltage. Protection of the terminals of the instrument and strict adherence to the specified maximum ratings has to be ensured by the user. For further information on how to connect specific device under test to the instrument contact Sciospec or an authorized representative directly.

### Measurement Terminal MEArack

configuration	60 separately controllable electrodes
measurement channels	60 Gold-spring loaded contacts for contacting the chip
connector type	Sciospec Extension Port Connector
Frequency range	100 mHz - 10 MHz
Signal amplitude	$\pm 1$ V
Channel transition time	< 10 ms
Calibration	Integrated impedance calibration

⚠ Be aware of the range and absolute maximum ratings of all to this instrument connected electronic measurement devices.

## 1.2.2 General Specifications

dimensions	approx. 100mm x 100mm x 16mm (width x length x height)
operating conditions	0°C to 40°C, <80% relative humidity non condensing, 0...3000m altitude
non-operating conditions	-25°C to 80°C, <80% relative humidity non condensing (The temperature gradient should not exceed 1K/min to reach operating conditions.)

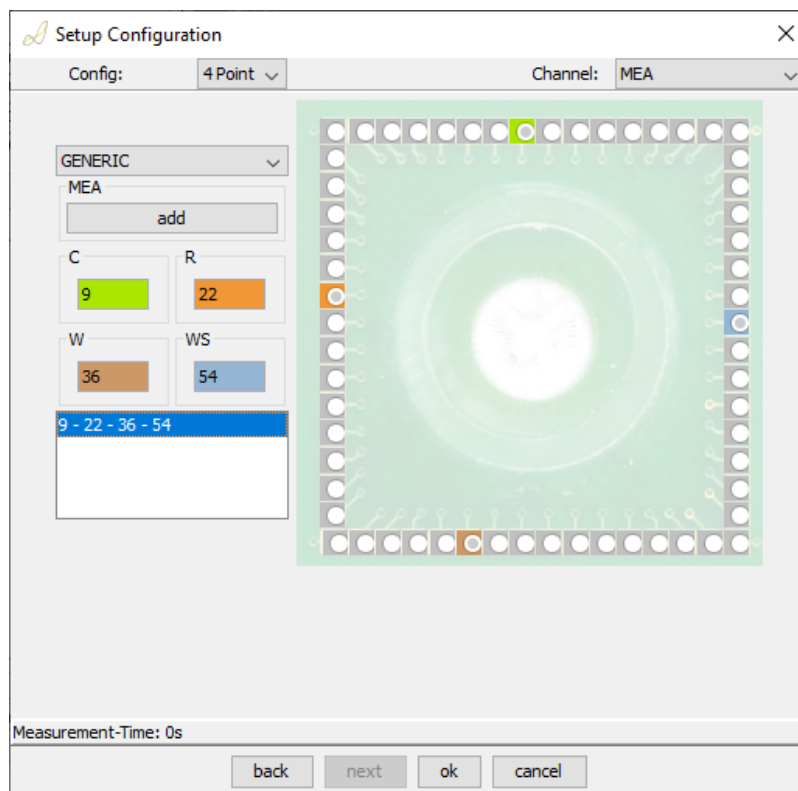
## 1.3 Channel Selection

### 1.3.1 Configuring the Measurement Port of the *MEArack* in the Software

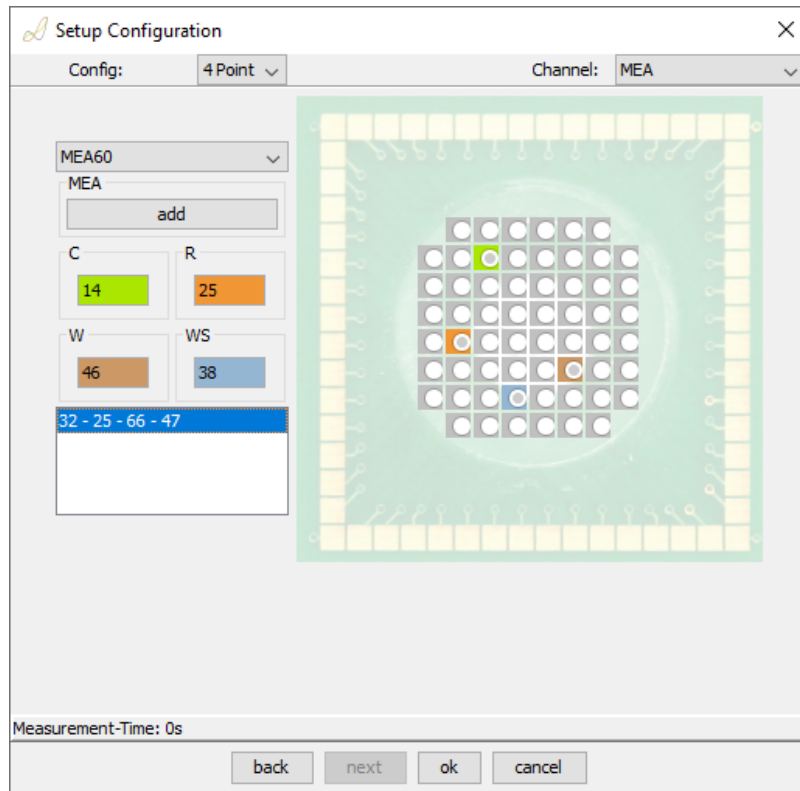
The configuration of the setup has to be done accordingly to the manual of the corresponding impedance analyzer Sciospec ISX-3v2, Sciospec ISX-3mini or Sciospec ISX-5.

The measurement channel of the *MEArack* is done in the Channel-Settings dialog by selecting MEA as the primary channel. By clicking on [\[add\]](#) the graphic display of the electrode configuration enables the selection of the desired C-port (green). Afterwards the R-port (orange), W-port (brown) and WS-port (blue) can be selected.

**i** Not all port configurations are possible. Not selectable electrodes are grayed out.



In the above example the measurement will be done with the channel configuration C9, R22, W36 and WS54.



In the above example the measurement will be done with a MEA60 Chip and the channel configuration C14, R25, W46 and WS38.

### 1.3.2 Compatible MEA Chips

The MEArack provides the possibility to insert 49mm x 49mm multielectrode arrays. Examples of compatible MEA chips are:

- Qwane Bioscience MEA60 (formally Ayanda Biosciences)
- Multichannel Systems MEA1060

## 1.4 Sciospec COMInterface

Configuring the Measurement Port of the *ECIS Plate Adapter* with the Sciospec Communication Interface

### 1.4.1 Command list

- ◦ ▪
- **0xB2 - Set ExtPort Channel**
- **0xB3 - Get ExtPort Channel**

## 1.4.2 Command description

### 0xB2 - Set ExtPort Channel

Command Layout

B2 04 **CP RP WP WS** B2

Description

ExtensionPort- channel settings

[CP]	(C-Port): Counter - Port Selection
[RP]	(R-Port): Reference - Port Selection
[WP]	(W-Port): Work - Port Selection
[WS]	(WS-Port): Working Sense - Port Selection

All Ports numbers are send in integer straight binary numbers running from 1 to 8.

Return

ACK

Example

B2 01 **01** B2

configures the measurement to the channel configuration W1

### 0xB3 - Get ExtPort Channel

Command Layout

B3 00 B3

Description

Reads the currently set ExtensionPort configuration

Return

B3 04 **CP RP WP WS** B3

ACK

ExtensionPort- channel settings

[CP]	(C-Port): Counter - Port Selection
[RP]	(R-Port): Reference - Port Selection
[WP]	(W-Port): Work - Port Selection
[WS]	(WS-Port): Working Sense - Port Selection