

FECB (mobile)

Final Electrical Calibration Bench



Application

- Electrical calibration and testing of the **CS18 hardware**
- Electrical calibration of **signal analyzer, measurement systems and digital voltmeters**

Range of use

- **Accredited calibration laboratories**
- **Monitoring** of measurement devices in development and industry
- **National Metrological Institutes** as highest metrological authorities (NMI)

Features

- Determination of the **complex frequency response** of the measurement channels **ICP, DIR, CHA** and **MIC**
- Determination of the electrical properties of the **PR module**
- Determination of the electrical characteristics of the **generator**
- Determination of the capacitance values of the **Q-U-ICP module**
- **Logging** of all measurement deviations
- **Guided** program flow with **connection plans**
- **Management** of CS18 hardware information
- Creation of a **calibration file** for the CS18 software, which serves as a correction table
- **Update function** for CS18 systems
- Ability to **self-adjustment** of the measuring station

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Components

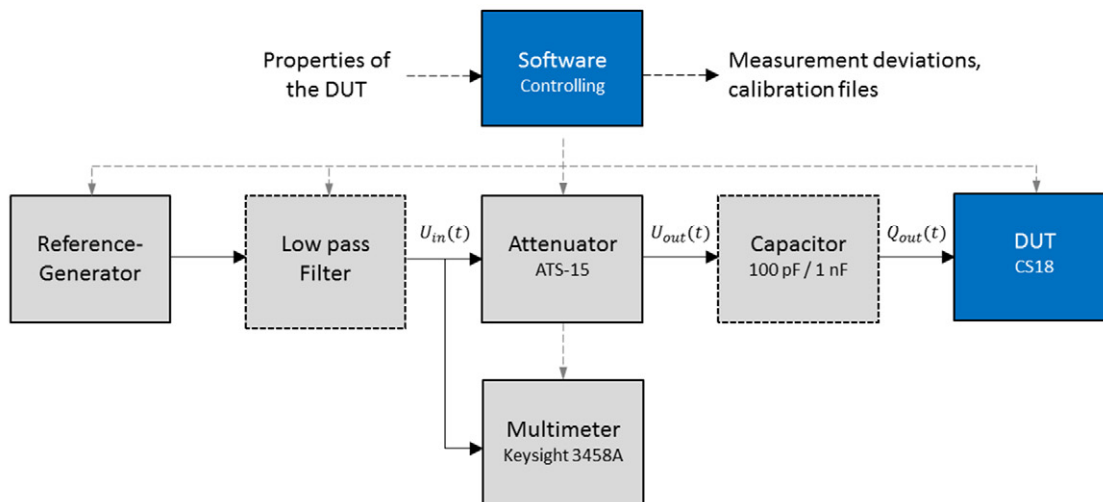
- **Reference-Calibrator**, SPEKTRA
 - Reference-Generator with variable low pass filter
 - Reference input channels for phase measurement
 - Reference capacitors for capacitance measurement
 - Control unit
- Attenuator **ATS-15**, SPEKTRA
- **Relay box**, SPEKTRA
- **Reference standard**
 - **Keysight 3458A** digital multimeter
- **Reference standard**
 - **Keysight 33220A** function / arbitrary waveform generator
- Standard-PC
- **Optional**
 - **GenRad / General Radio 1404-A** (1000 pF) primary standard capacitor
 - **GenRad / General Radio 1404-B** (100 pf) primary standard capacitor

Technical Data

| General | | | | | | |
|--|---|--------------|-----------------------------------|-----------------|-------------------------------------|--------------------|
| Frequency range | 0.1 Hz to 50 kHz | | (High G: 0.1 Hz to 100 kHz) | | | |
| Voltage range | 700 μ V to 7 V | | | | | |
| Charge range | 70 fC to 7 nC | | | | | |
| Scaling factors of the attenuator ATS-15 ¹⁾ | 1:1, 1:8, 1:64, 1:512 | | | | | |
| Measurement uncertainty of FECS | | | | | | |
| Frequency range, Hz | Generation and measurement of basic quantity, % | | Transfer coefficient magnitude, % | | Transfer coefficient phase angle, ° | |
| | Voltage U_x | Charge Q_x | Voltage G_{UX} | Charge G_{QX} | Voltage ϕ_{UX} | Charge ϕ_{QX} |
| 0.125 - < 20 | 0.2 | 0.2 | 0.2 | 0.25 | 0.4 | 0.4 |
| 20 - 20 k | 0.1 | 0.1 | | | 0.5 | 0.5 |
| > 20 k - 50 k | 0.25 | 0.25 | 0.25 | 0.3 | 1.5 | 2.0 |

¹⁾Traceable to national standard

Typical setup for the determination of the frequency response



All data are subject to change without notice
All voltage and charge values are RMS values

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