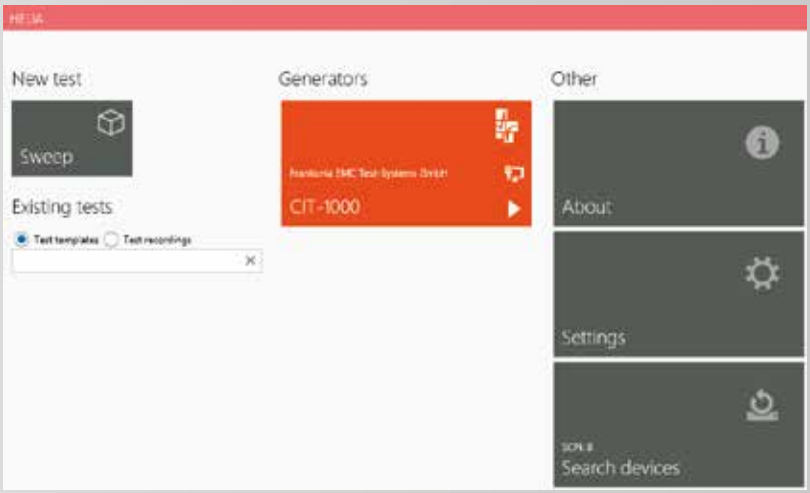
Helia software

The Helia software operates the CIT-1000 for conducted immunity tests from 4 kHz to 1200 MHz. The Software offers different modules for the calibration, the linearity check and the frequency sweep for the testing. The buttons for the different modules are shown on the right. Additionally, the three units, RF-signal generator, RF-power amplifier and RF-voltmeter can also be used separately. The computer-aided control of the CIT-1000 allows modifications according to standards like frequency range, impedance or level without having to manipulate the hardware.

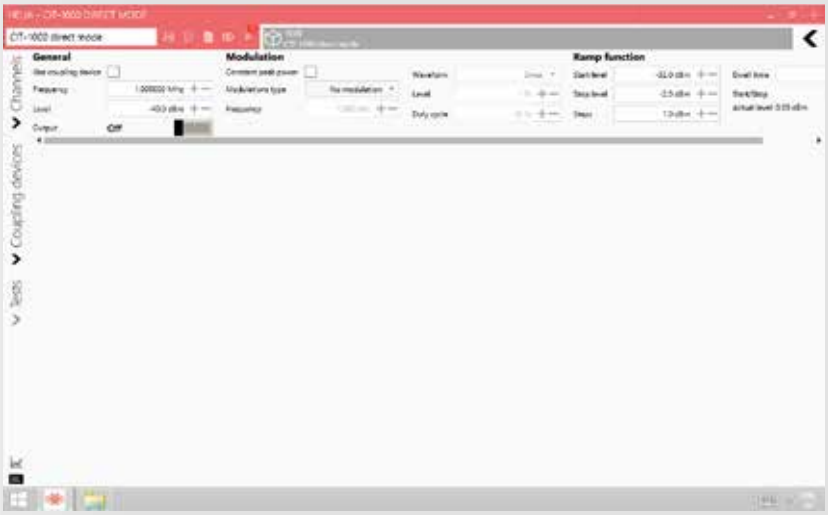


Calibration

The CDNs (Coupling/Decoupling Networks) functionality is to inject a test-voltage into the lines and/or to decouple any connected peripheral equipment from the EUT. As the characteristics of the CDNs and the power amplifier are not linear for every frequency, a calibration is needed. During the calibration the required power to generate a constant test voltage for every frequency is determined. To run the calibration the software needs a start and stop Frequency and a Step increase. According to the used coupling device the impedance, Voltage and Level has to be set as well. Different measured quantities for monitoring, like target or forward power are available on the left panel side. They can be selected and moved to the main window via drag and drop. The calibration can be started with a simple play button in the middle.

Linearity Check

After the calibration a linearity check has to be done to confirm whether the amplifier works in the linear range. The tolerance and the gain can be adjusted according to the standard. With the start of the linearity check two curves are added in the forward power graph. A green line represents the maximum and a rose line represents the minimum of the acceptable values. Both curves result from the measured forward power during the calibration, the gain and the tolerance.



Sweep

After a successful calibration, a complete test can be started by choosing "Sweep" in the main menu. The settings, e.g. start and stop frequency, step increase and test voltage can be set as in the calibration before. It is possible to change those settings manually. The EUT is monitored automatically and the data are shown graphically, as well as the amplifier output. In case of a malfunction of the EUT, the test can be stopped any time. A description of the malfunction can be entered in a comment line, which is included in the test record.

Direct Mode

The direct mode offers the possibility of testing the EUT at discrete frequencies. Either with a fixed test voltage or, optionally, with a ramp function. In that case, the start/stop voltage and the step width needs to be defined by the tester.
After the test, the protocol can be saved. It consists of a diagram which shows the test results and the head of the protocol. The head contains date and time of the test as well as all settings. It can also contain parameters like temperature, air humidity, testing set-up, EUT and name of the person who performed the test.