Video Manual & Overview


# Shortform Introduction


# ***dito*** & ditoControl

Short manual for ***dito*** & ditoControl Software
(Version ≥ 1.20 )

*Simulation of*
*Electrostatic*
*Discharges as per*
*IEC 61000-4-2,*
*ISO 10605 and*
*Related standards*

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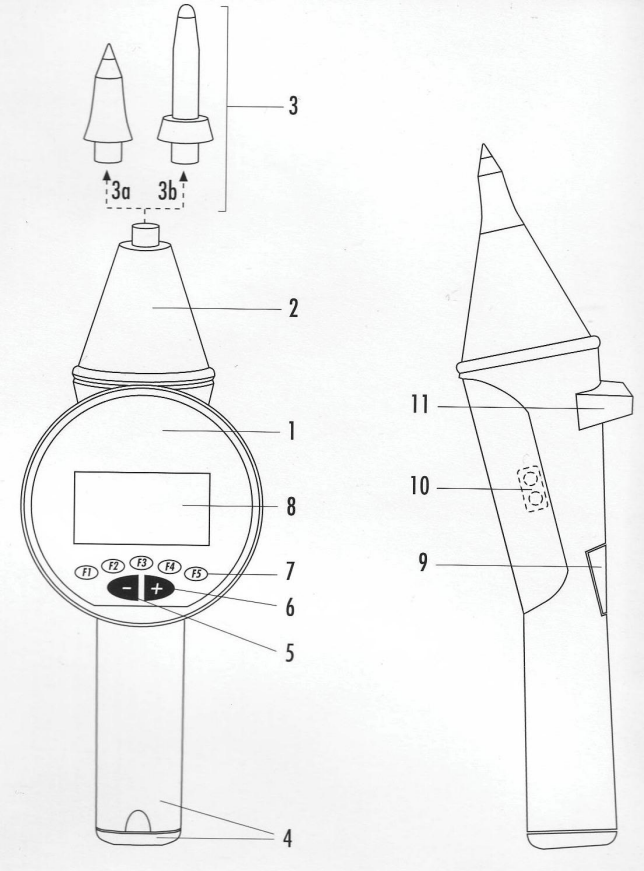
# 1 dito: *Operation*

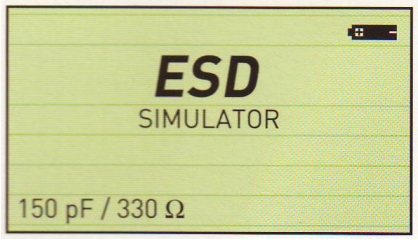
## 1.1 dito: *Starting up*




| | | |
|---|---|---|
| **Parts** | *1* | ***dito** base unit* |
| | *2* | *Discharge Module* |
| | *3* | *Discharge Tip*<br>*3a Contact discharge*<br>*3b Air discharge* |
| | *4* | *Battery* |
| **Operation** | *5* | *– Button* |
| | *6* | *+ Button* |
| | *7* | *Function keys F1...F5* |
| | *8* | *Display* |
| | *9* | *Trigger and ON/OFF* |
| **Connections** | *10* | *Optical Interface* |
| | *11* | *Ground Cable* |

**Switching On – Switching Off**

| | |
|---|---|
| *ON* | *Push trigger button (9) once* |
| *OFF* | *Push trigger button (9) for 3s* |




### Start-up Display

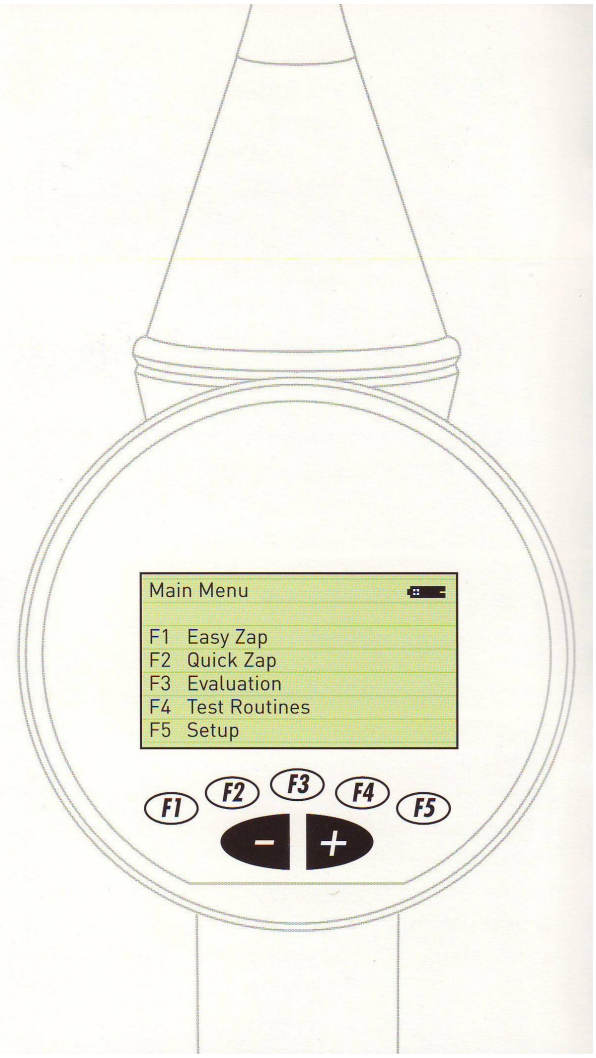
*After switching ON, **dito** starts a self test routine to check the basic function of the unit including the high voltage power supply. The R/C discharge parameters of the module are displayed in the lower line.*

*In case that there is no discharge module connected, **dito** will show the message*

***No Discharge Module**.*

*By pressing the trigger button once again you can get into the main menu.*

## 1.2 **dito:** *Main Menu*




**F1 → Easy ZAP**

*Easy Zap is based on "Standard Test Levels". After pressing Start, the operator can select the required test level with the function keys F1 F2 F3 F4 F5 and with ◄► the polarity can be changed.*

**F2 → Quick ZAP**

*Within Quick Zap the test voltage can be changed with the function keys F3 F4 while running a test. With buttons ◄► the polarity can be changed. The value ΔU per step can be selected in the Service Menu under Setting. Evaluation*

**F3 → Evaluation**

*This test routine helps to search for most sensitive test points at the DUT. The discharges are released with a higher repetition rate. This routine is normally not used for final testing at the preselected test points.*

**F4 → Test Routines**

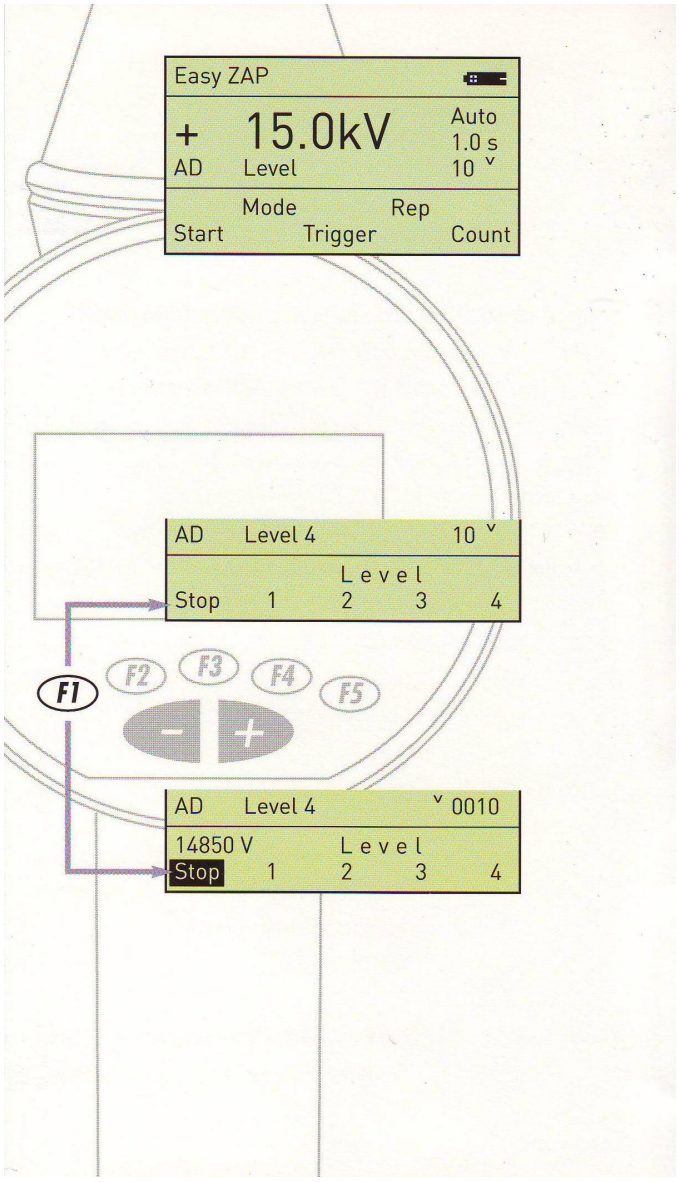
*The **dito** includes 8 standard routines, which the operator can preprogram on his own by using the „ditoControl" software. The data can be downloaded via the optical interface. The Standard Routines will guide the user through the complete test procedure.*

**F5 → Setup**

*Hardware and software settings are made in this menu.*

- *The standard test levels for AD and CD can be set.*
- *Hardware settings*
- *Firmware settings*

## 1.3 **dito:** *Starting with Easy ZAP*




### Easy ZAP

*Select the menu Easy ZAP by pushing function key (F1). With Easy ZAP only predefined standard levels are tested.*

*Before the test is started, the operator has to select*

(F2) *the discharge mode,*
***CD** contact discharge ( discharge tip 3a) or*
***AD** air discharge ( discharge tip 3b)*

(F3) *the trigger mode,*
***Single** : single discharge,*
***Auto** : push once the trigger button [9] ,*
***Cont** : trigger button must be pressed all time*

(F4) ***Rep**: the repetition rate of the discharges*

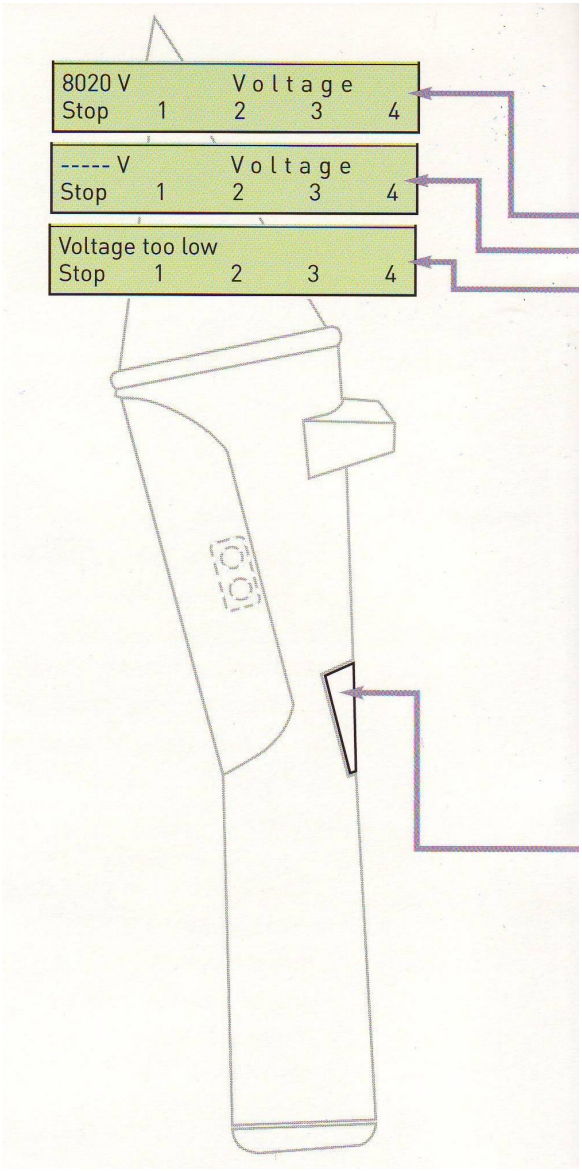
**Functions**

*Select : By pushing a function key several times, the operator can change between different modes,*
*e.g. Trigger :* **Single → Auto → Cont** ↩.

*Start : After all parameters are selected, the operator can make dito ready for testing by pushing the function key (F1) Start . The test itself is controlled by the trigger button [9].*

- *During the test, you can change polarity by pressing ◀▶.*
- *With the function keys (F1) (F2) (F3) (F4) (F5) the operator can change the test level.*
- *Pressing the function key (F1) Stop will stop the test routine.*

## 1.4 **dito:** *Easy ZAP menu*




*In case of air discharge mode the discharge may occur at any voltage depending on the distance between the discharge tip and the DUT. This may happen if the discharge tip is too close to the DUT and the discharge occurs during the charging up procedure of* **dito**. *Therefore* **dito** *shows you the following messages:*

**Discharge occurred after the preselected test voltage was reached ( normal case)**
**Discharge occurred between 50% and 100% of the preselected test voltage**
**Discharge occurred between 0% and 50% of the preselected test voltage**

### Acoustical signals

*To enable the beeper select:*
(F5) → (F2) *Hardware setting* → (F1) *Key Beep* = **ON / OFF**

**Single-beep** = *Input confirmation if Key beep is ON*

**Double-beep** = *Double beep always indicates warnings or failures e.g.:*

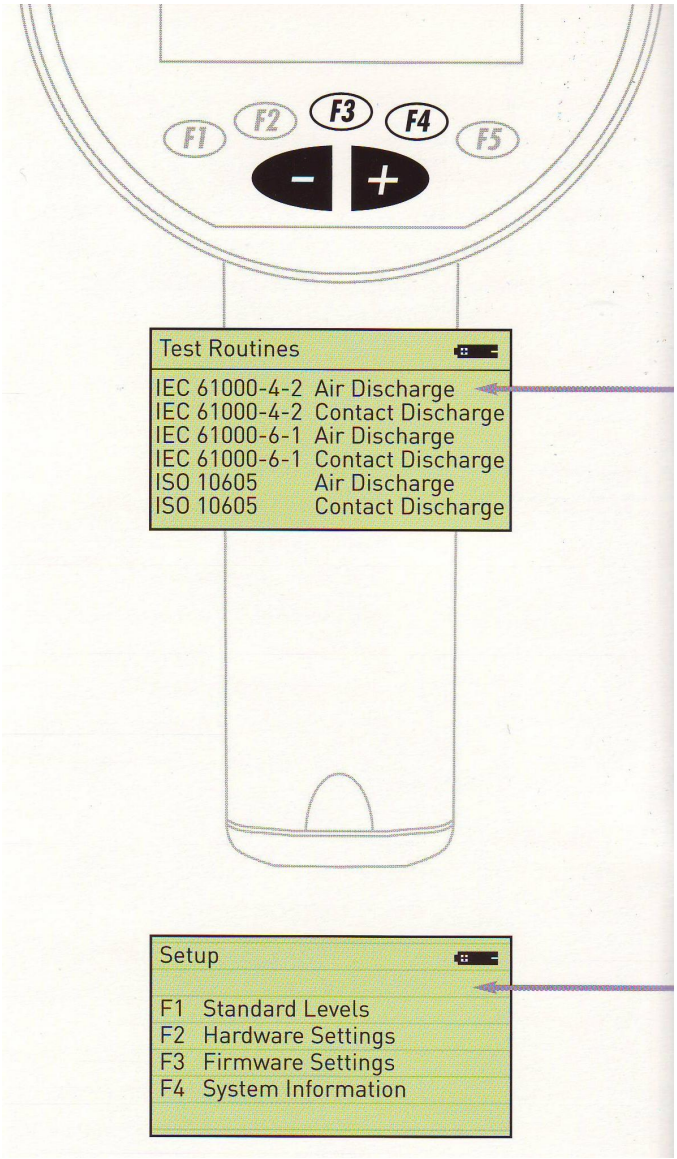
- *No discharge Module*
- *No discharge relays available*
- *Battery voltage too low to generate high voltage.*
- *Pre-discharge ( air discharge occurred before the selected test voltage was reached)*
- *Test voltage not reached or not correct*

**Triple-beep** = *Test is finished;* ***dito*** *has shut down (switched OFF)*

### The Trigger button [ 9 ]

| | | |
|---|---|---|
| *To switch ON:* | | *Press the Trigger button once* |
| *To switch OFF:* | | *Press the Trigger button [9] for 3s Exception (* **dito** *is in Start Mode )* |
| *To change the menus:* | | *Press the Trigger button once* |
| *To release discharges* | **Single**: | *Press Trigger button once* |
| | **Cont** : | *Discharging as long as the Trigger button is pressed.* |
| | **Auto**: | *Press Trigger button once, the test runs automatically. Pressing Trigger button again stops the test procedure.* |

## 1.5 **dito:** *Other menus*




### Quick Zap Menu

*In Quick Zap Menu all parameters can be selected individually. During a running test :the voltage can be increased by pushing*

F3 *decreases the voltage*
F4 *increases the voltage*
◀▶ *changes the polarity*

### Test Routines Menu

*With F4 the user can enter the menu Test Routines. 8 preprogrammable test routines can be stored.* **dito** *is delivered with 6 standard routines.*
*The test routines can be programmed in the ditoControl software which is available as an option. Via the optical interface the test routines can be downloaded to* **dito**. *More information please read in the dito and ditoControl manual.*

### Evaluation

*With F3 the user can enter the menu* ***Evaluation****. This menu can be used to check the DUT for most sensitive test points. The preferred method to find these test points is air discharge* ***AD*** *( discharge tip 3b ). Air discharges are continuously generated with a maximum repetition rate of 20Hz.*

*Contact mode* ***CD*** *( discharge tip 3a ) is selected for long duration tests to apply a large number of repeatable discharges to a specified test point. The preferred Trigger mode is* ***Auto*** *or* ***Continuous****.*

*All parameters can be selected individually. During the evaluation procedure, the operator can change the polarity and the test voltage.*

### Setup

*For detailed information related to the setup menu please read the* **dito** *manual.*

### Firmware updates

*Firmware updates can be downloaded via the optical interface.*

## 2 DitoControl

# ditoControl


Short manual for ditoControl software
(Version ≥ 1.20 )

***ditoControl*** is not only a software to control dito and to perform ESD tests automatically, but it is a software which manages the office work as well as the test itself. The following important steps are covered:

**Office work (preparation of the test)**

⇒ Making „Test Notes“ as preparation for the real test

- Description of the DUT
- Specification of the test points based on a picture of the DUT.
- Description of functions and failure criteria of the DUT.
- Specification of the test parameters and the test routine
- Specification of auxiliary equipment and special test software used in this test.
- Print out of the Test Notes. This document is used to support the operator during the running test. Comments which are important can be written into and can be added later on into the test report.

⇒ Generation of test routines

- Based on the Test Notes the test parameters are fixed.
- Preprogrammed the test routines based on the data in Test Notes.
- The different test routines can be managed by ***ditoControl*** (library)
- Standard test routines and standard libraries can be built up.
- The complete test preparation is made. All data are available on the computer

**Laboratory work.**

⇒ Make **dito** ready for testing.

- ***dito*** is connected to the computer and ***ditoControl*** is started.
- The preprogrammed test files are downloaded to ***dito***. If necessary or useful all other test routines which are available in ***dito*** can be deleted.
- The operator can only perform tests for which the related test routines are available. False operation by the user therefore are not possible.

⇒ The operator performs the test at the DUT.

- All test data of the actual test are stored in ***dito***.
- In case of failures at the DUT the operator can set Fail-Flags, which also are stored in ***dito.***
- Comments related to these Fail-Flags can be added manually to the Test Notes and can be later on entered to the test report at the right place. All Fail-Flags are indicated in the test report.

**Office work.**

⇒ The operator generates a test report.

- After the test is finished dito will be connected again to the computer. All test data stored in dito will be uploaded and are the basis for the test report.
- ***ditoControl*** automatically generates the test report.
- The generated document can be converted into almost all other formats.
- Custom specific logos and pictures can be implemented.
- The documents and the used test routines can be directly emailed to other ***dito*** users or laboratories.

# 3 Technical requirements

| | |
|---|---|
| Computer | PC Pentium or higher |
| Monitor | VGA 800*600, 16 Mio. Colors, **Small Font** |
| Disc drives | CD-ROM for installation |
| Mouse | |
| Interface | RS232 Com1/ 2 / 3 / 4 |
| Operation System | Win9x / Windows Me / Windows2000 / Windows NT |
| Hard disk space | ***dito***Control, needs approx. 20MB on the hard disc |
| Cable to ***dito*** | Connecting cable RS232 with optical link |

# 4 Installation / Uninstall

Start MS-Windows.
Insert the CD in the CD-ROM drive of your computer.

## 4.1 Installation

If you have turned off Auto-run, double-click the file named ***Setup.exe*** in root directory of ***dito***Control CD. This launches the installation that will guide you through installation of ***dito***Control on your hard disk. If ***Auto-run*** is turned on, the Setup program will be loaded automatically, when you insert ***dito***Control CD.

## 4.2 Remove

Choose in the starter menu
**„System control „**
**„-> Software“**
**„-> Remove of Software “**

Click on „uninstall“ and the de-installation starts automatically. In case that some files will not be deleted automatically, it might be necessary to remove the directory DITOCONTROL with the help of a file manager.

## 5 Start *dito*Control

Start MS-Windows.

Start ***dito***Control, double-click on the ***dito***Control -Icon. 

The startup screen appears for approx. 2s.


After that ***dito***Control shows up on the desktop.

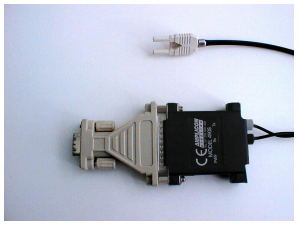
## 5.1 Connect the *dito* simulator via RS232-Interface

Connection between ***dito*** and computer is done by RS232 interface via optical link.

**The following steps are necessary :**

- Connect the RS232 optical link to ***dito***.
- Switch ***dito*** on or go to the start menu (double click on ***dito*** trigger button).

  ⇒ In case that no communication is possible it is recommended to go back to the start menu or switch on/off the ***dito***. This is not a failure but a wanted procedure.

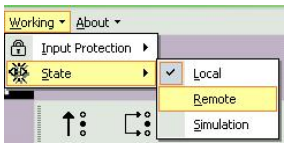


- Connect the IFA interface adapter to the RS232 connector of the computer.

- Start ***dito***Control (see above).
- Set ***dito*** into remote via software.

  The initial status of the ***dito*** is local. It can be set into remote by clicking onto the state button in the status bar and selection of Remote.


  It can also be set into remote by selecting the menu <Working><State><Remote>.

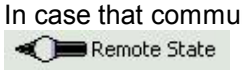



It is not necessary to set the baud rate, because ***dito***Control checks the RS232 parameter.

- If for the first time no communication is possible the following dialog will appear.
- Select know the button **Detect** to start the RS232 Wizard.


- The RS232 Wizard now automatically scans for the connected ***dito***.
- At the end of the wizard ***dito*** should be detected. If not, please check all points above.


In case that communication works, ***dito*** is in Remote and ***dito***Control shows the status.




***dito***Control can simulate the ***dito*** simulator. For this mode please select <*Working*><*State*> <*Simulation*>.

## 5.2 Registration

After a successful installation of ***dito***Control, it is necessary to register the software.
If the software is not registrated correctly, the operator can use it twenty times. After that a registration code must be inserted, otherwise the software can no more be used. For registration code please call factory or the responsible sales office.
For registration please select the menu <*About*><*Info and Registration*> and then click on **Register.** The register dialog will now appear. Please insert the requested data and press the button **Register**.

⇒ During the registration it is necessary to connect the ***dito*** simulator, because the registration code is related to the actual ***dito*** device number.



## 5.3 Mode

***dito***Control supports two different operation modes, **Easy** and **Expert** mode.
For more information please refer to the information window or the application note.

### 5.3.1 Functions in Easy Mode

| | |
|---|---|
| | **Information**<br>• The operator gets information how to generate test procedures or how to conduct a tripod test. |
| | **Test Routines**<br>• They are preprogrammable and can be download to ***dito***.<br>• The test routines can be imported or exported. |
| | **Test Report**<br>• The test data can be uploaded from ***dito*** after a test is finished.<br>• A wizard guides you through the generation of a test report |
| | **Tripod Test**<br>A tripod test can be performed with ***dito***. The parameters can be defined manually or based on a standard with different test levels. It is also possible to execute a voltage sweep, with start to stop voltage in certain voltage steps. |

### 5.3.2 Functions in Expert Mode in addition to Easy mode

**Configuration**

| | |
|---|---|
|  | **Simulator**<br>• The serial number can be downloaded to ***dito***.<br>• For customer specific discharge modules the values for the R/C network can be entered.<br>• New firmware can be downloaded to ***dito*** from ***dito***Control.<br>• The calibration date can be entered<br>• User adjustments to the factory setting can be done. |
|  | **Standard**<br>• As part of ***dito***Control, a database of standards is available. New standards can be created or modified. |
|  | **Test Objects / Products**<br>• A product database can be defined, including pictures of the test setup and DUT. These data can be inserted into the **Test Notes** and **Test Reports.** |
|  | **Report Headers**<br>• The header of the printed document can be defined in Report Header Presetting. Text and Logo can be inserted. |
|  | **Auxiliary Equipment**<br>• For an ESD test auxiliary equipment might possibly to be used. These devices can be described in **Auxiliary Equipment** and linked into the test report. |

**Testing**

| | |
|---|---|
|  | **Test Notes**<br>In Test Notes, different test parameters can be predefined. The test notes can be printed and used as guide during the ESD test. |
|  | **Test Routines**<br>• The test routines stored in ***dito*** can be uploaded.<br>• Test routines can be generated based on the information of a test note. |
|  | **Test Results**<br>Test results can be uploaded from ***dito*** and used for the generation of a test report. |
|  | **Test Report**<br>The test report can be created by using the information of a test note. |
|  | **Tripod Test**<br>A tripod test can be performed. The parameters can be defined manually or based on a standard with different test levels. It is also possible to execute a voltage sweep with start to stop voltage with predefined voltage steps. |

**Information**

| | |
|---|---|
|  | **Test Procedure**<br>The Test procedure describes different steps for a manual or tripod test. |
|  | **Application Note**<br>An application note for generating test notes, test routines and test report is available and can be printed out. |
|  | **dito Manual**<br>The ***dito*** Instruction Manual is available in ***dito***Control and can be printed out. |

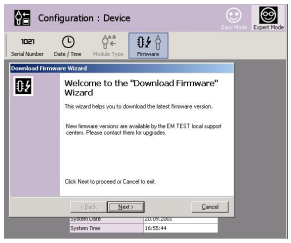
## 5.4 Download of *dito* firmware

New version of firmware can be easy downloaded with ***dito***Control.

For this select the menu <*Configuration Device*> Firmware.

A wizard will guide you through the download.

All relevant points are described in the wizard.




WARNING

Download must be made with a **RS232 Interface only**. Using an USB to RS232 interface will not deliver enough power to the optical link. Therefore the datatransfer will fail and *dito* will not install the new firmware and can not be operated furthermore. The unit has to be send back to factory or to the responsible sales office.

WARNING

Before operating the download check the battery condition of the *dito* simulator. At first the installed firmware will be erased. In case that afterwards *dito* is switched off, the communication is interrupted or the battery charge gets too low, *dito* can not be operated furthermore. The unit has to be send back to factory or to the responsible sales office.

### 5.4.1 Language selection

For change the dito firmware language the user has to download the version with the preffered language.

Available languages
- German : dito16_sim_**d**_version.cde
- English : dito16_sim_**e**_version.cde

## 5.5 Status bar

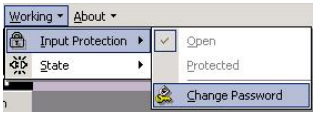
The functions in the status bar are :


- *Product Group*
  Selection of product groups which are used for generating test routines, test notes and test reports, and also for the tripod test.
  The product group determines the selectable standard area in the different wizards.
- *Battery Load*
  Indication of battery charge condition.
- *State of **dito***
  Indication Local or Remote status of ***dito***

## 5.6 Input Protection

Some data can be password protected.
In this case the predefined test routines and standards can not be modified.

- To activate the input protection please select the menu <*Working*><*Input Protection*><*Change Password*>.




- Then enter the password.


- The switching between Open and Protected can be done in menu <*Working*><*Input Protection*>


- Please insert the password to enable the protection.