SAMPLE CORE
I.P. TESTER
TDLV
Instruction Manual

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1 Introduction

The SCIP (**S**ample **C**ore **I.P.)** tester is a new compact, lightweight, low consumption unit designed for resistivity measurements.

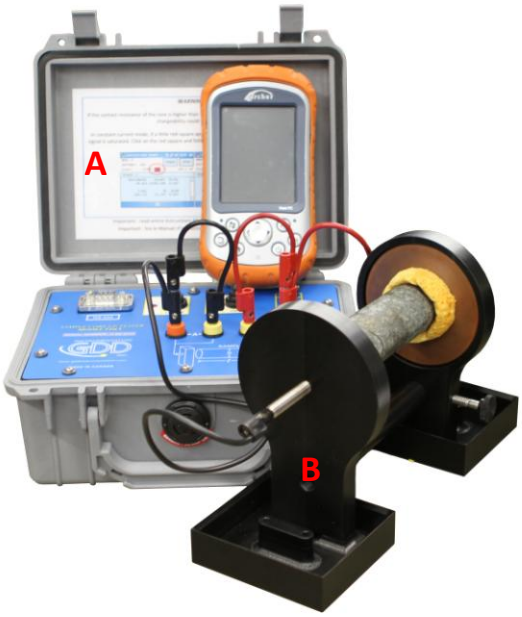
The SCIP tester uses a field handheld computer to process data acquisition. The operating system is Windows Embedded Handheld 6.5 Professional.

Characteristics:

- **Related to the GDD Rx 8-32:** The SCIP acts as a 1 dipole receiver relating DDH Cores to the resistivity and IP surveys.
- **Programmable windows:** The SCIP offers twenty fully programmable windows for higher flexibility in defining the IP decay curve.
- **Available Modes:** Arithmetic, logarithmic, semi-logarithmic, Cole-Cole and user defined.
- **IP display:** Chargeability values, Resistivity and IP decay curves are displayed in real time on a PDA.
- **Internal memory**: Over 100 000 readings can be stored in the PDA's internal memory. Each reading includes the full set of measurement parameters. Data are stored on flash type memory and cannot be lost even if the PDAs battery is totally discharged or absent.
- **Transmitting mode** : Can be used as a low voltage transmitter of 3, 6, 9 or 12V or 0.5, 5, 50 or 500uA.

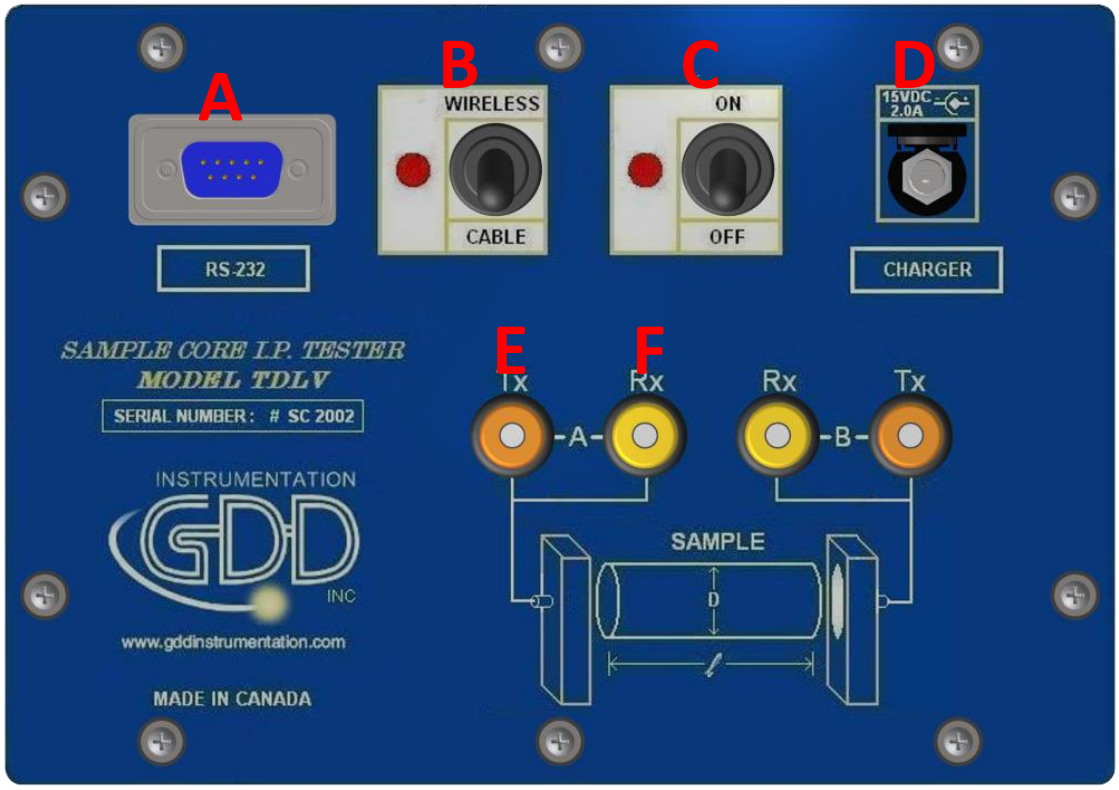
2 SCIP tester accessories

A	1x	SCIP tester model TDLV
B	1x	Set of core holders
C	1x	Archer2 Field computer with one rechargeable 10600mAh Li-Ion battery, one hand strap and one capacitive stylus
D	1x	Set of red/black cables banana/banana or banana/alligator
E	1x	SCIP tester AC charger with international plug kit (universal voltage)
F	1x	Archer2 AC charger with international plug kit (universal voltage)
G	1x	Serial communication cable 9 pos. D-SUB female - 9 pos. D-SUB female
H	1x	Archer2 micro USB sync cable
I	1x	Screwdriver (for Archer2 battery cap)
J	1x	Allen key
K	1x	Handy pocket tape (10'/3m)
L	1x	70g bottle of Cupric Sulphate with MSDS
M	1x	SCIP tester Instruction Manual and SCIP tester Utilities CD (contains SCIP Tester software, Sync softwares, SCIP Tester manuals, Archer2 manual)
N	1x	Archer2 Quick Start Guide



3 SCIP tester components

The SCIP tester components are described in this section.



A - RS-232 connector - 9 pin serial communication port
This connector is used to connect the RS-232 cable between the Archer2 Field PDA and the SCIP tester.

B - CABLE/WIRELESS switch
This switch is used to select CABLE (RS-232) or WIRELESS (Bluetooth) communications with the PDA. The red light indicates the WIRELESS position.

C - ON/OFF switch
This switch is used to turn the SCIP tester ON. The red light indicates that the SCIP tester is ON.

D - CHARGER connector
This connector is used to charge the SCIP tester's battery with the AC charger, and to supply power to the SCIP tester when the battery is discharged.

E - TX terminals
Transmitting connectors.

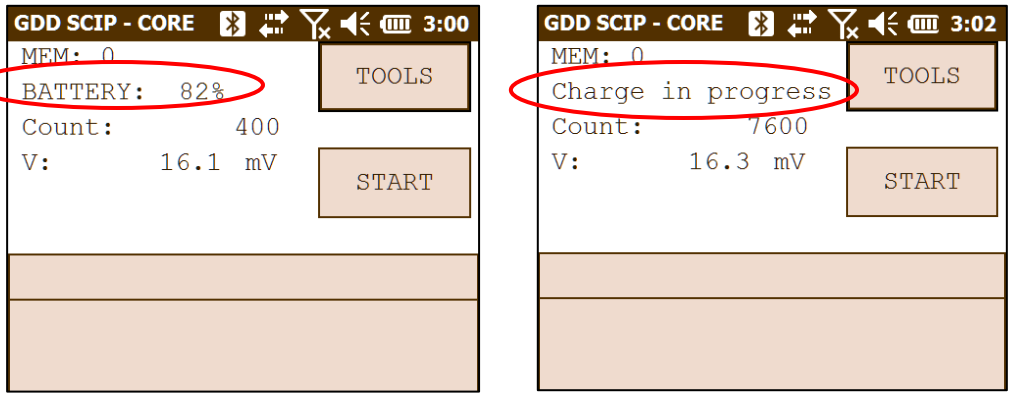
F - RX terminals
Receiving connectors.

4 Power

GDD's SCIP tester is powered by a rechargeable Li-Ion battery. Here are a few tips for using and storing the SCIP tester.

Usage

- Use the power supply provided by GDD to charge the SCIP tester battery. If you want to use another AC charger, make sure that the specifications are the same as those of the AC charger provided by GDD.
- Do not replace the SCIP internal battery without the authorization and advice of GDD's technicians.
- The total operating time of the SCIP tester depends on environmental conditions. Using the SCIP in very cold weather (-20^{0}C to –40^{0}C) decreases the operating time. At normal temperatures (20°C), the operating time is from 10 to 16 hours.
- The power level of the batteries and the charging status appear on the main screen of the Archer2 PDA when using the SCIP program.



- Use the AC charger as a power supply for working with the SCIP tester when the battery level is too low.
- There is a protection circuit in the SCIP tester that prevents charging the battery in cold weather (under 0°C) or in hot weather (over 45°C).
- The SCIP will turn itself off when the battery reaches a critical low level.

Storage

- When storing the SCIP tester for a few days or more, make sure that the battery is fully charged.
- Store the SCIP tester in a cool, dry place.

5 Important tips for getting good results

The SCIP (**S**ample **C**ore **I**nduced **P**olarization) measures geophysical properties of the ore such as apparent resistivity and chargeability. The SCIP simulates an Induced Polarization survey. The waveform is ON+, OFF, ON-, OFF. The current flows through the sample and is then switched off. While the current is flowing through the sample, a resistivity (Rho) is calculated from the ON Time Voltage. When the current is switched off, the voltage across the sample drops and a decay curve is measured. The Chargeability (M) is calculated from this DECAY.

Here are a few tips about preparing and measuring your core samples:

- Soak your core samples in water for a few days before testing them.

  It is recommended to soak the samples in water in order to keep their properties as in the natural environment. The best way to take measurements would be on fresh samples. If it is not possible, two days of soaking should be sufficient. Note however that it is not necessary to leave the samples to soak. The important point is to keep the same measurement conditions for all samples. The values will not necessarily match with field data but the measured values of a sample compared to another one allow defining which ones are less resistive and/or more chargeable. You may then correlate anomalies versus results from the field.

- Remove the excess of water on the core sample before beginning the measuring process.

- Use a saturated copper sulphate solution.

  To take a measurement, the sample is fixed between electrodes by using sponges dipped in copper sulphate solution. Make sure that some copper sulphate crystals are not dissolved in water to get a saturated solution.

- Before starting the measurement, make sure that the core sample is completely dry on its surface.

- During the whole measuring process, make sure that the work bench, the core holders and the rod that fix together the core holders are completely dry.

- During the measuring process, wait until the contact resistance becomes stable before taking a reading. This may take a few minutes.

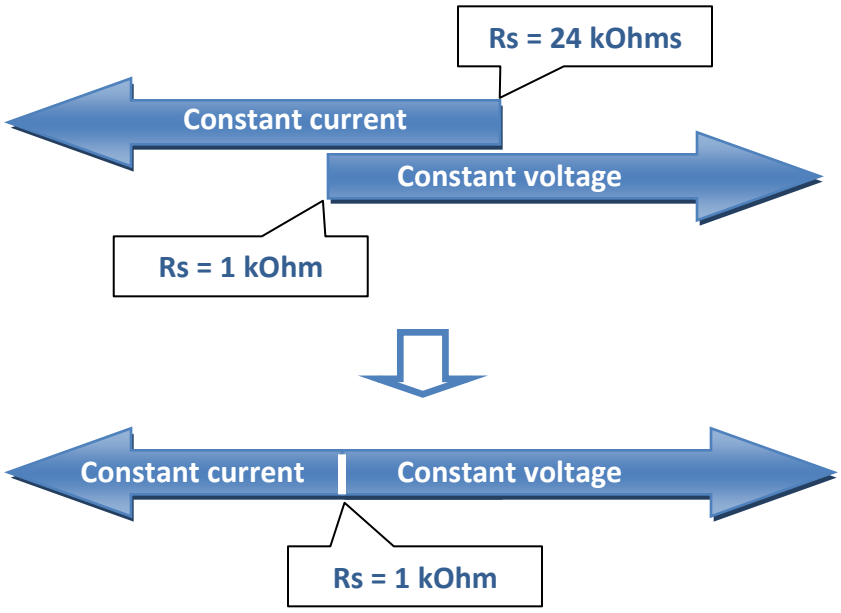
- Select the most appropriate settings.

Select the most appropriate stack in order to stop the reading when the chargeability and the resistivity responses are stable. Depending on your sample and contact resistance, the number of stacks needed to obtain stable values will vary.

We suggest using the same timing and windows than your field IP survey. Otherwise, a timing of two (2) seconds and arithmetic windows give good results.

- Use the appropriate mode (constant current or constant voltage).

  There are two modes of measurement, voltage and current. In order to determine which one to use, the contact resistance value (Rs) can be a good indication. For a Rs between 1 kOhm and 24 kOhms both modes are possible. However, we suggest selecting a constant current for an Rs lower than 1 kOhm and a constant voltage when Rs is greater than 1 kOhm. In voltage mode make sure that the Vp (mV) is greater than half of the selected voltage and in current mode make sure that the I (uA) is almost the same value of the selected current. If there is saturation, the reading may not be reliable. In that case, try a lower current or a lower voltage.



- For better results, take the average of several readings on each core sample.

6 Quick Start Guide

Important note : Using a finger may still be the preferred option for projected capacitive screen technology, but we understand a stylus may also be necessary (like when it's cold). The way you hold a capacitive stylus really impacts how it works. To register a point, it is like the screen is taking a sample from which to calculate the position. It then snaps to the closest line on a grid. If you hold a capacitive stylus at an angle, it registers less area and does not calculate your true position as well. For best results on a capacitive screen like the Archer2, hold the stylus as perpendicular to the screen or straight up as you can. In this section, you will see some tips to use the Archer2 keypad to perform some actions of the SCIP program.

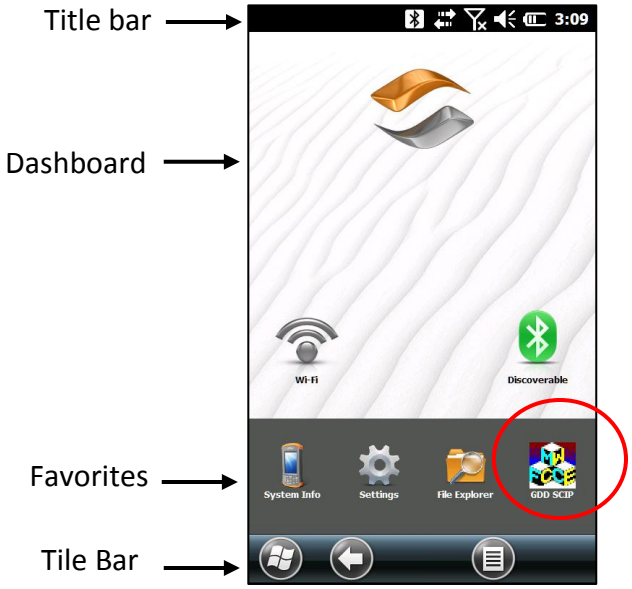
1. Place the core sample into the core holders (see Section 7 – How to use Core Holders).

2. Turn the SCIP tester ON using the ON/OFF switch on the front panel.

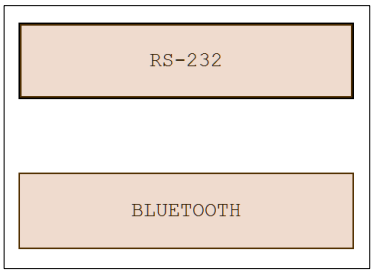
3. Select the communication mode using the CABLE/WIRELESS switch on the SCIP tester's front panel. If Cable mode is selected, connect the serial communication cable between the SCIP (RS-232 connector) and the Archer2 Field PDA.

4. Turn on the Archer2 Field PC with the ON/OFF key.

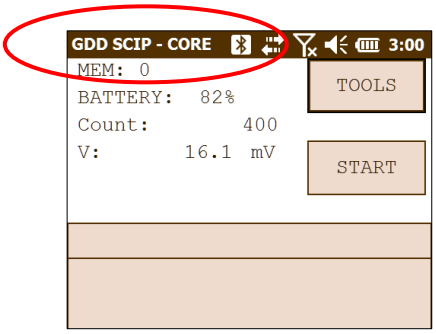
5. Click on GDD SCIP icon in the favorites bar.



6. Select the communication mode: *RS-232* (CABLE) or *BLUETOOTH* (WIRELESS). You can move back and forth between the different actions using the tab button (⇥) of the keypad. Press Enter button (↵) of the keypad to perform the highlighted action.

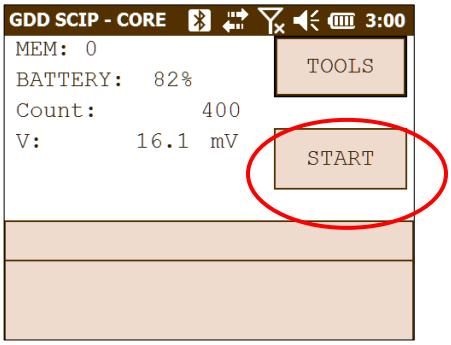


7. The following screen appears.

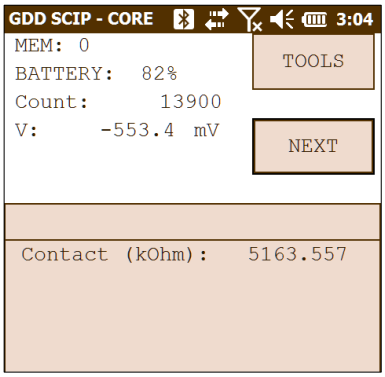


Make sure that the opened window is the SCIP_CORE window. See section 8.2 for more details.

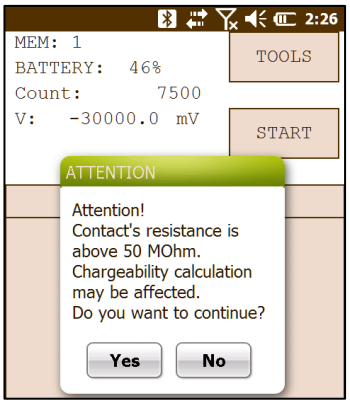
8. Click *S*TART (or press ⇥, and ↵ on the keypad) to begin the acquisition process.



9. The following screen appears. The 'Contact' is the value of the core resistance.

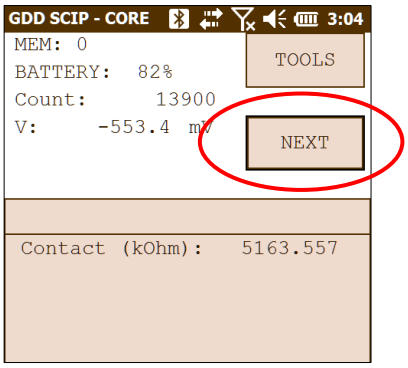


If the value of the core resistance is higher than 50 000 kOhms (50 MOhms), the value of the chargeability could be affected. If this should be the case, if you click on NEXT, the following message should appear:

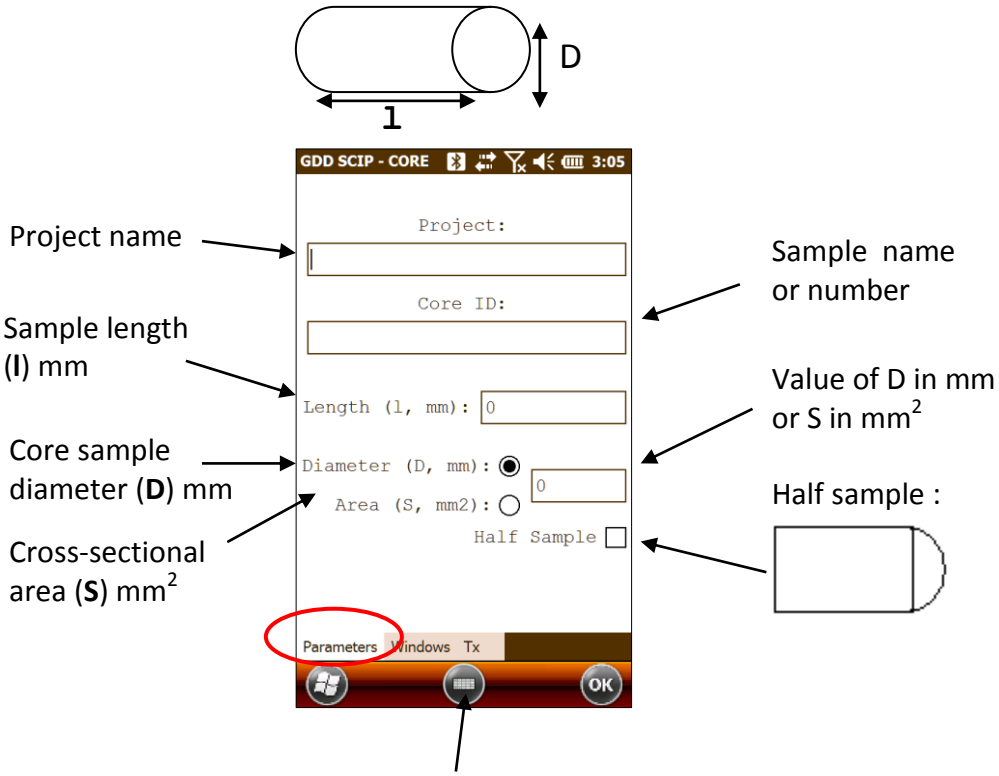


Click on Yes to continue or click on NO to stop the measuring process.

10. Click on NEXT (or press ⇥, and ↵ on the keypad) to continue.



11. Set the parameters of the core sample in the 'Parameters' window.

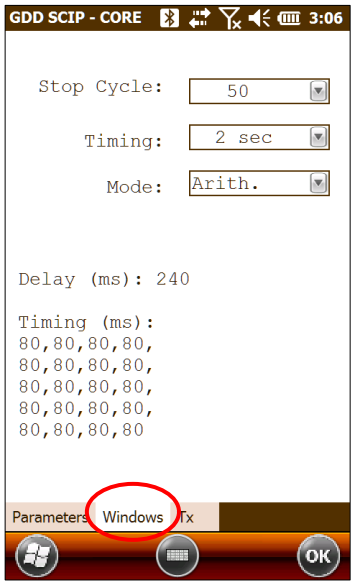


Open the soft keyboard at the bottom of the screen by clicking on it. You can also use the numeric keypad of the Archer2 Field PC to enter numeric values. Use the tab button (⇥) to advance the cursor to the next tab stop.

For a core sample, select Diameter and enter the diameter of the cross section in mm. If you measure a half core sample, select Half Sample.

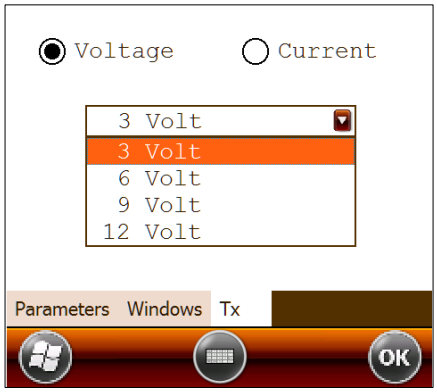
For any other type of sample, enter the cross-sectional area in mm^2.

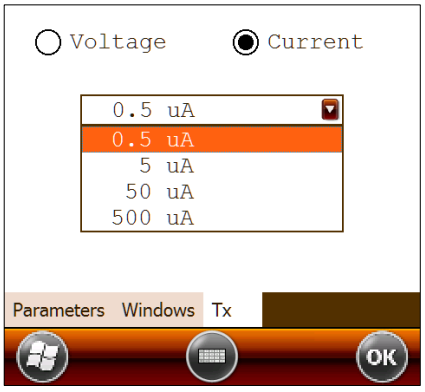
12. In the 'Windows' window, select the maximum number of stacks, the signal time and the mode (windows time definition). See Section 8.1 for more details.



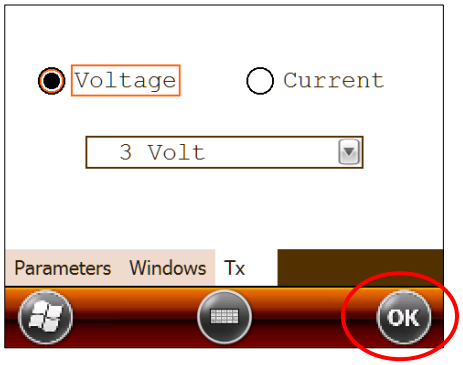
The time to get one reading increases with the number of stacks and the signal timing. It could take up to three(3) hours to get one reading with 50 stacks at a timing of 128 seconds.

13. In the 'TX' window, select if you want to use a constant voltage or a constant current. You can use a voltage of 3, 6, 9 or 12 volts or a current of 0.5, 5, 50 or 500 µAmps.

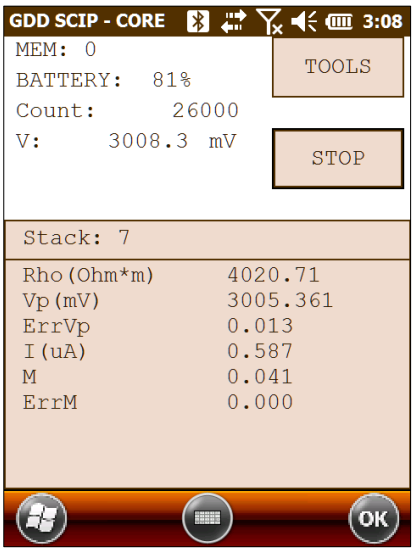




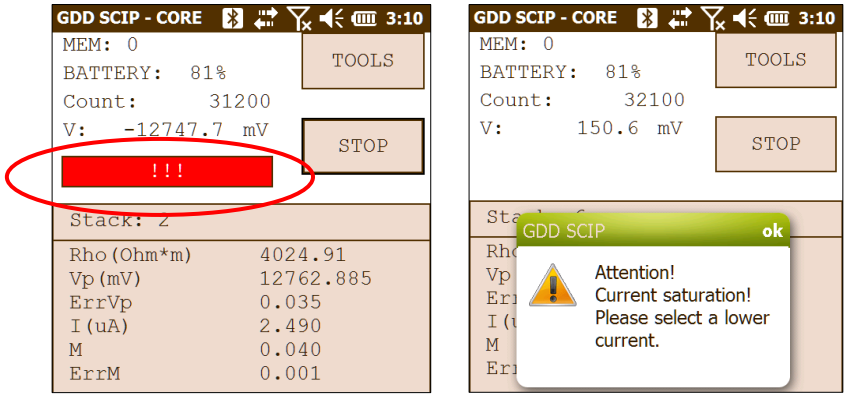
14. Click Ok (or press shift ⇧+5 OK on the keypad) to close the setting windows.



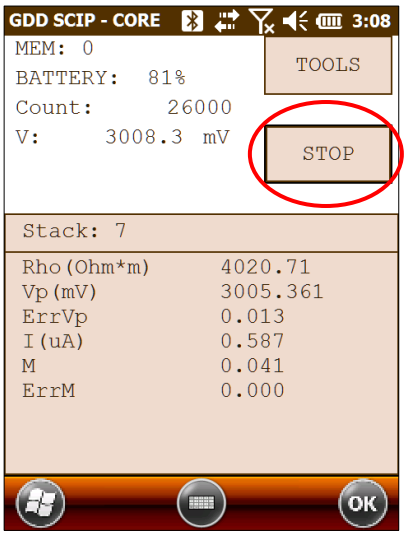
15. The following screen appears. See Annex 1 for details on the readings.



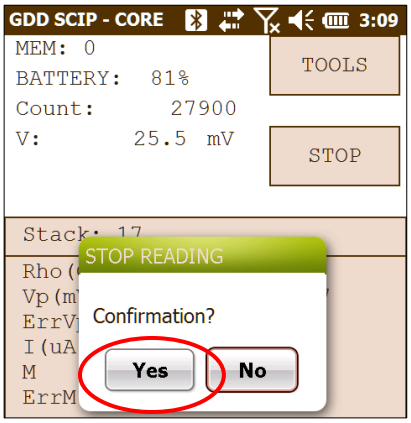
In constant current mode, if a little red square appears in the window that means that the signal is saturated. Stop the measuring process, select a lower current and start the readings over. These instructions appear in a pop-up window when you click on the red square.



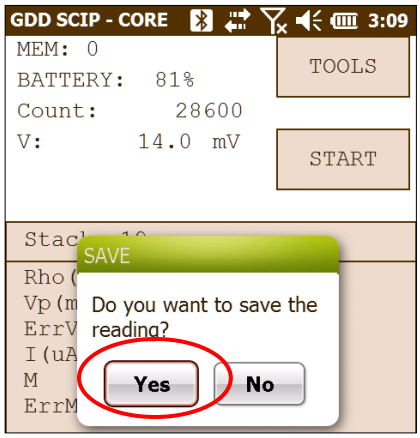
16. To stop the readings and save the data, click on STOP, or wait until the SCIP has finished acquiring data.



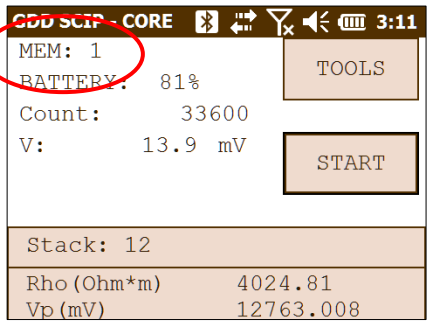
17. Click YES to confirm the operation.



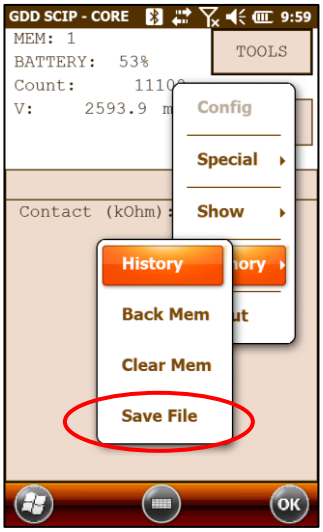
18. Click YES to save readings to Memory.



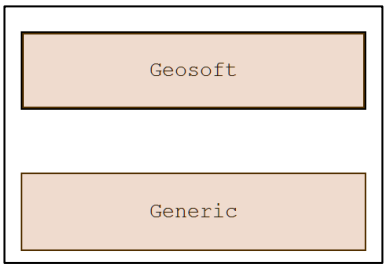
The *MEM:* number increases by one after saving. You can save more than one reading before creating a file.



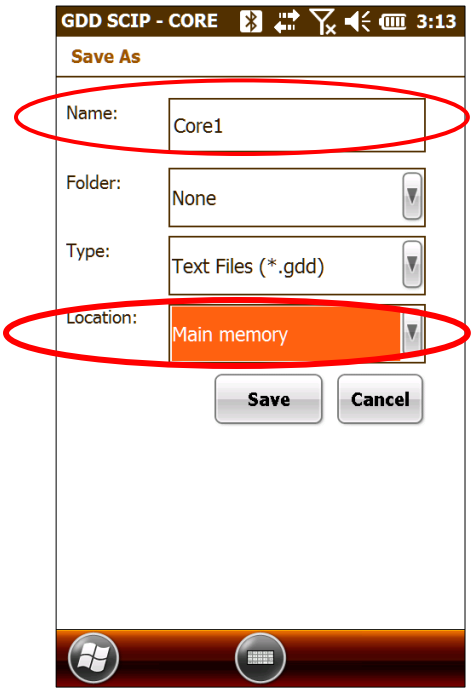
19. Click on 'Tools' and select 'Memory' to create a file with your saved data (or press ⇥, and ↵ on the keypad to open the Tools menu and press shift ⇧ + 8▼ or 2▲ to highlight the different options) . Click on 'Save File' (or press ↵ when Save File is highlighted).



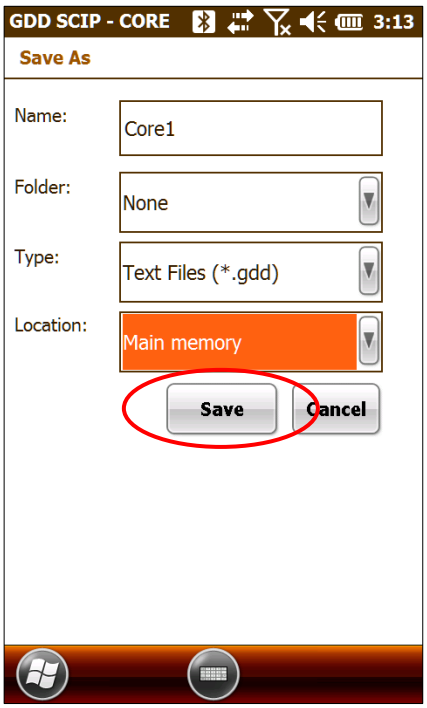
20. If this screen appears, select *Generic* to get the usual file format for SCIP tester data (*.gdd* file). The *Geosoft* button is used to create a specific file to be imported in *Geosoft* software. Take note that in the *Geosoft* file (*.dat* file), some information as core ID, length and diameter is missing.



21. Enter your File name and the location of your file in the Archer2 Field PC memory.

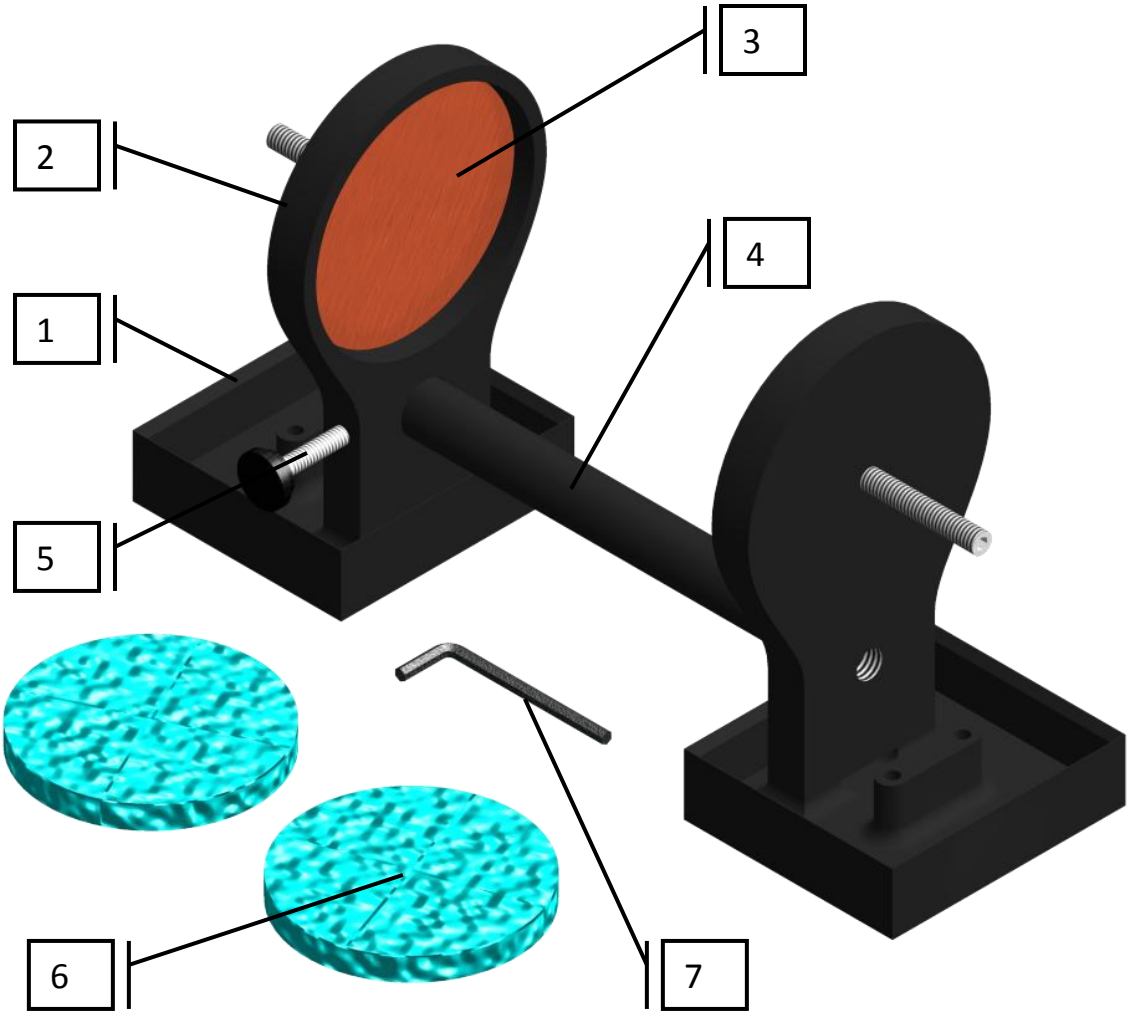


22. Click on Save to save your file.

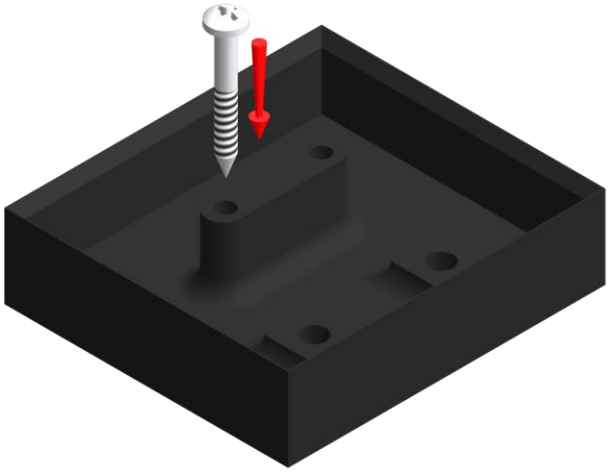


7 How to use Core Holders

7.1 Core Holders - components

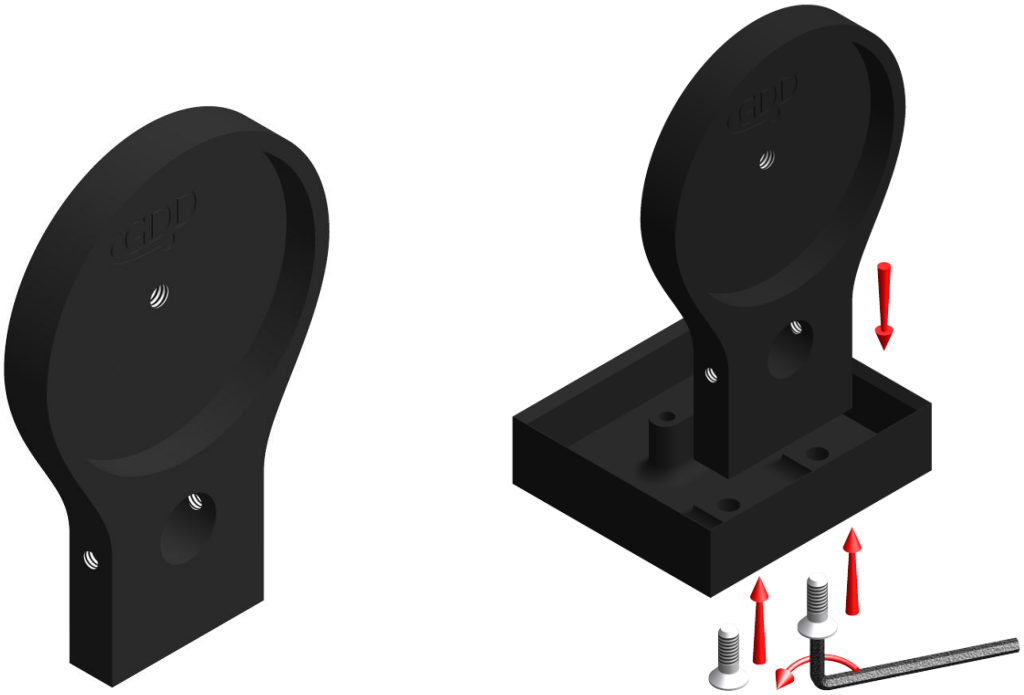


1. Receptacle (2x)



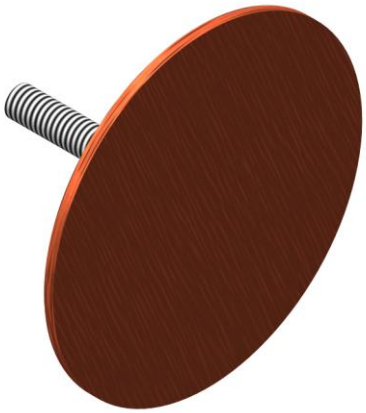
The two receptacles must be used to keep the surface between the two core holders dry. The receptacles keep all the liquid (water, copper sulphate) in them. It is possible to screw the receptacles onto a table using the two base holes.

2. Holder (2x)

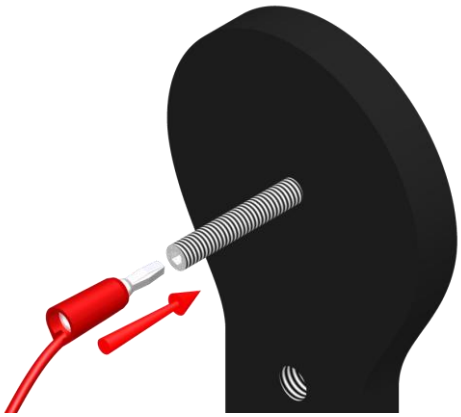


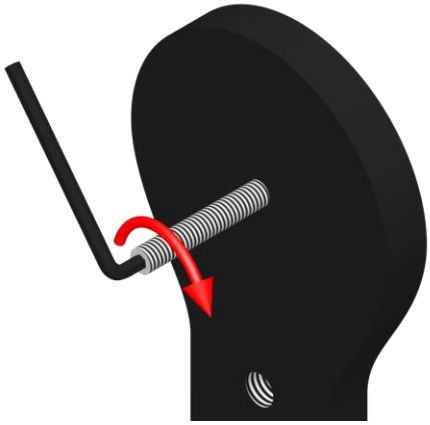
The two holders keep the core sample in place. Fix the holders to the receptacles with two bolts using the Allen key provided with the Core Holder.

3. Electrode (2x)



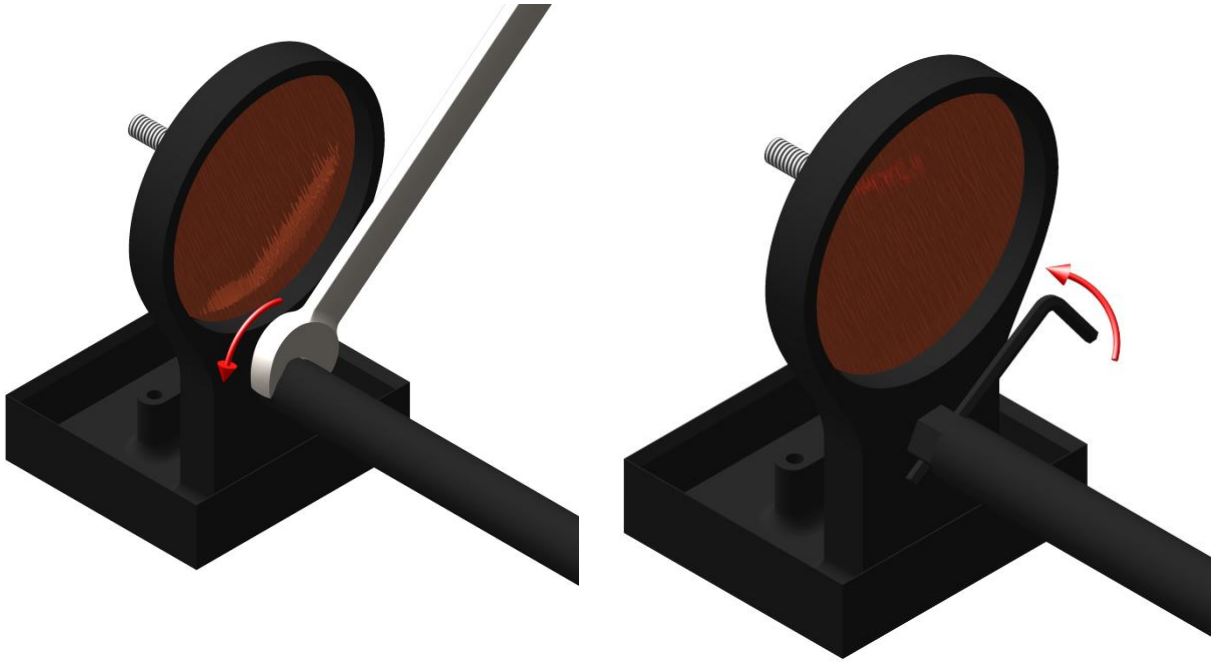
The electrode consists of a copper disc with a stainless steel bolt. The banana connector can be inserted into the bolt for better contact. It is possible to adjust the distance between the electrode and the holder by screwing or unscrewing the electrode using the Allen key.



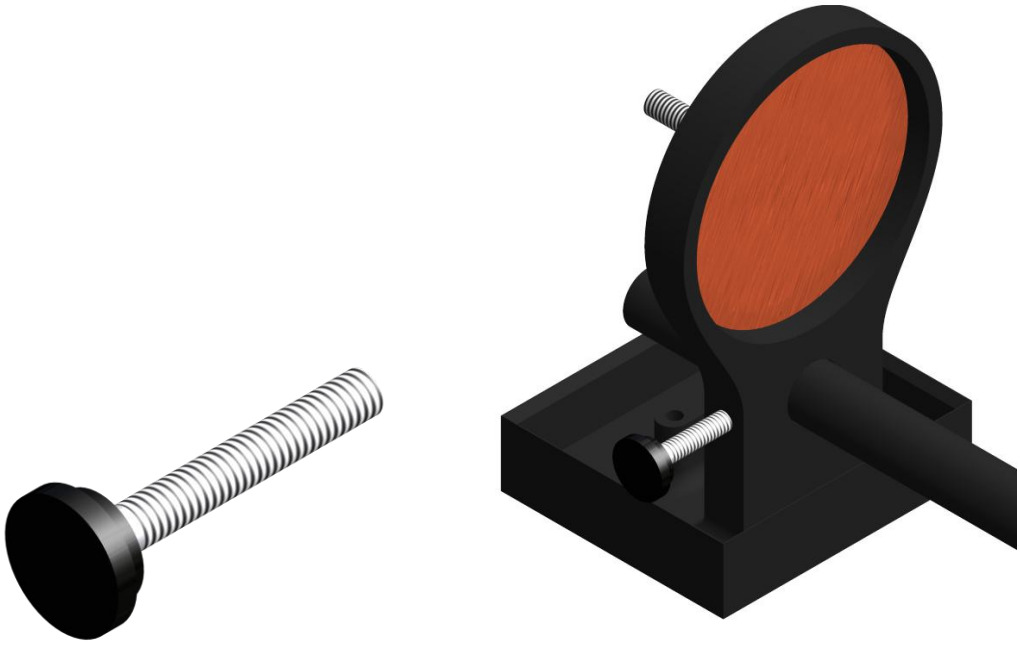


4. Rod (2x)

The rod fixes the two holders together. Move one of the holders along the rod to keep the core sample in place. It is possible to connect two or three rods together if the core sample is too long for one rod. To affix the rod, insert and screw. To remove the rod from the holder, unscrew the rod. If it becomes hard to unscrew the rod, use a 5/8'' wrench or the Allen key provided with the Core Holder.

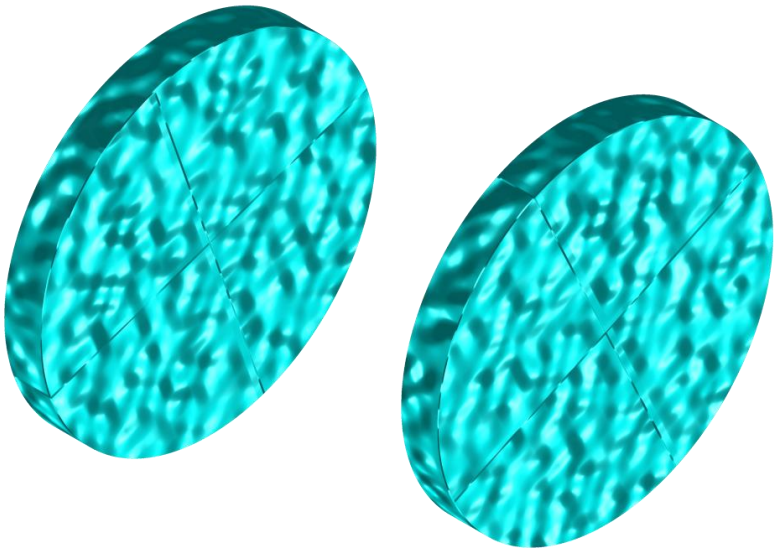


5. Fixing screw



The fixing screw holds the holder in place along the rod.

6. Cellulose sponges (soaked in a solution of copper sulphate*)



Using copper sulphate***** soaked sponges increases the contact between the core sample and the electrodes. Cellulose sponges give better results than other kind of sponges.

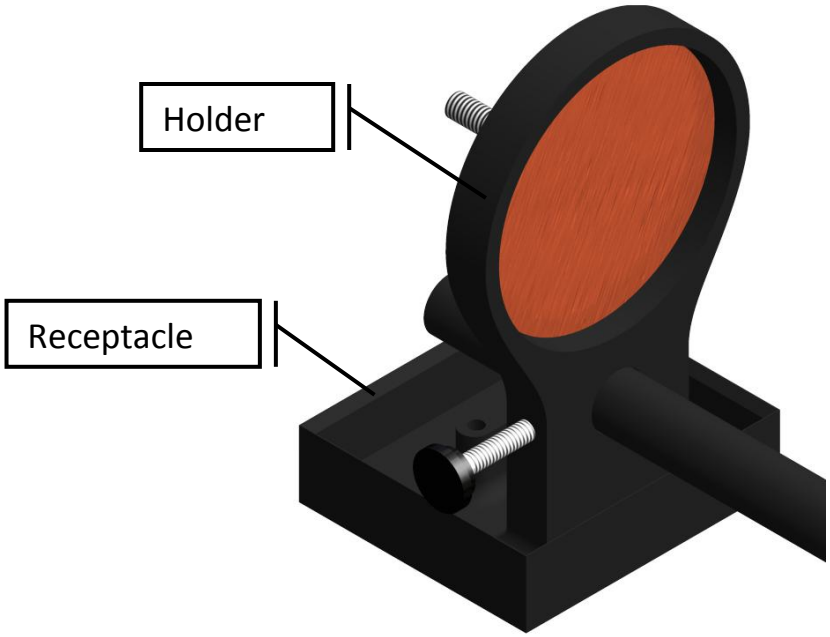
***Copper sulphate might be harmful if inhaled or ingested; or being in contact with the skin or the eye. We highly recommend wearing nitrile gloves, safety glasses and a safety mask when using copper sulphate.**

7. Allen key

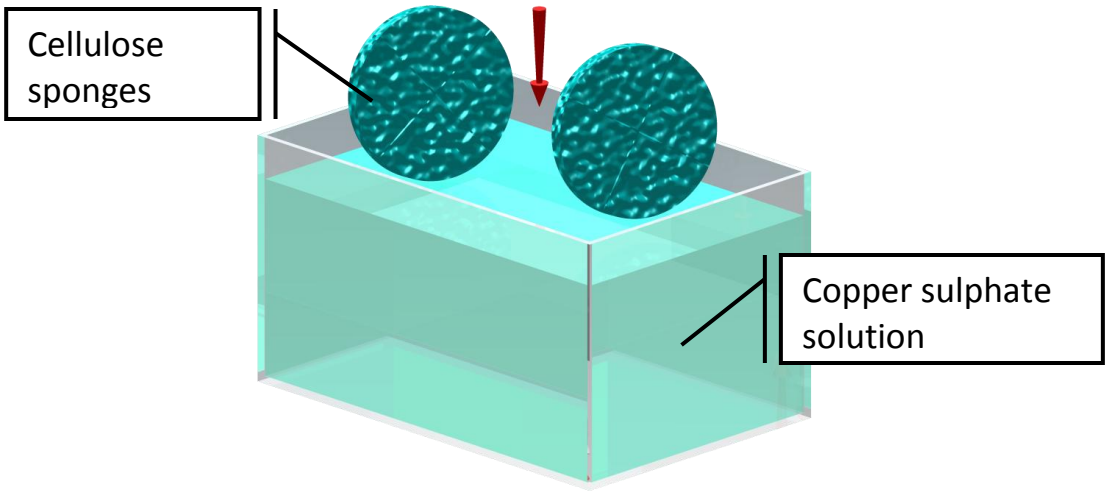
See points 2, 3 and 4 to know how to use the Allen key with the Core Holder.

7.2 How to use it

1. It is important to place each core holder into its receptacle to keep the surface between the two core holders dry.



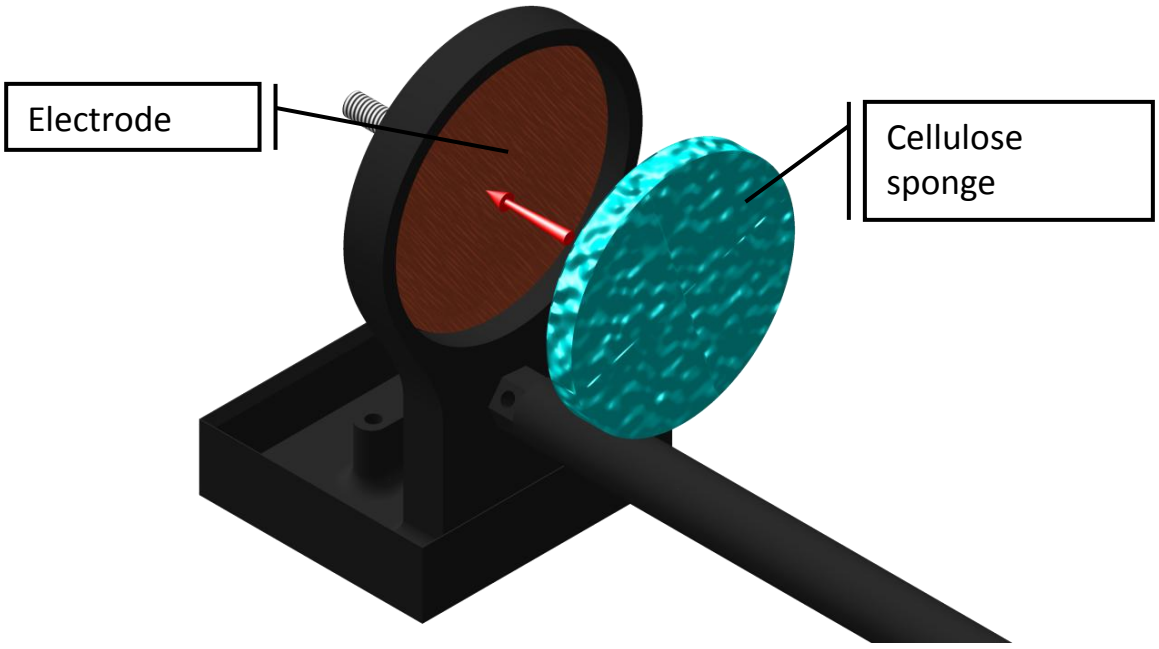
2. Soak the cellulose sponges into a solution of copper sulphate*. Make sure that both sponges are totally soaked.



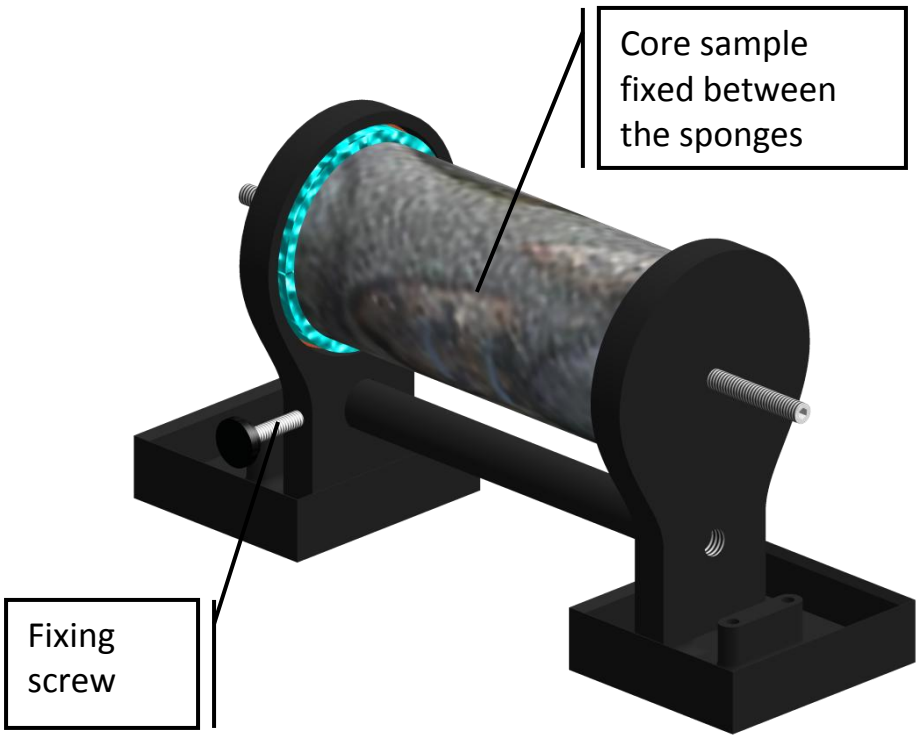
*** Copper sulphate might be harmful if inhaled or ingested; or being in contact with the skin or the eye. We highly recommend wearing nitrile gloves, safety glasses and a safety mask when using copper sulphate.**

3. Place one, two or three graduated rods between the core holders depending on the size of the core sample.

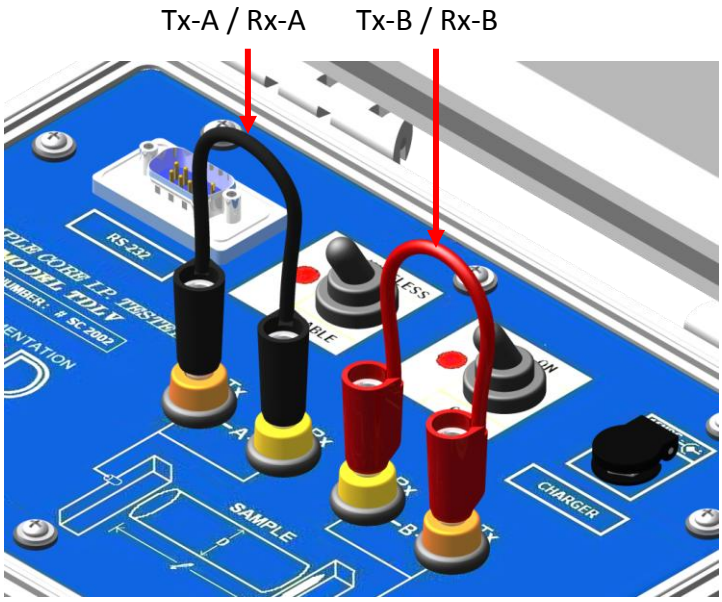
4. Make sure that the sponges touch the electrodes.



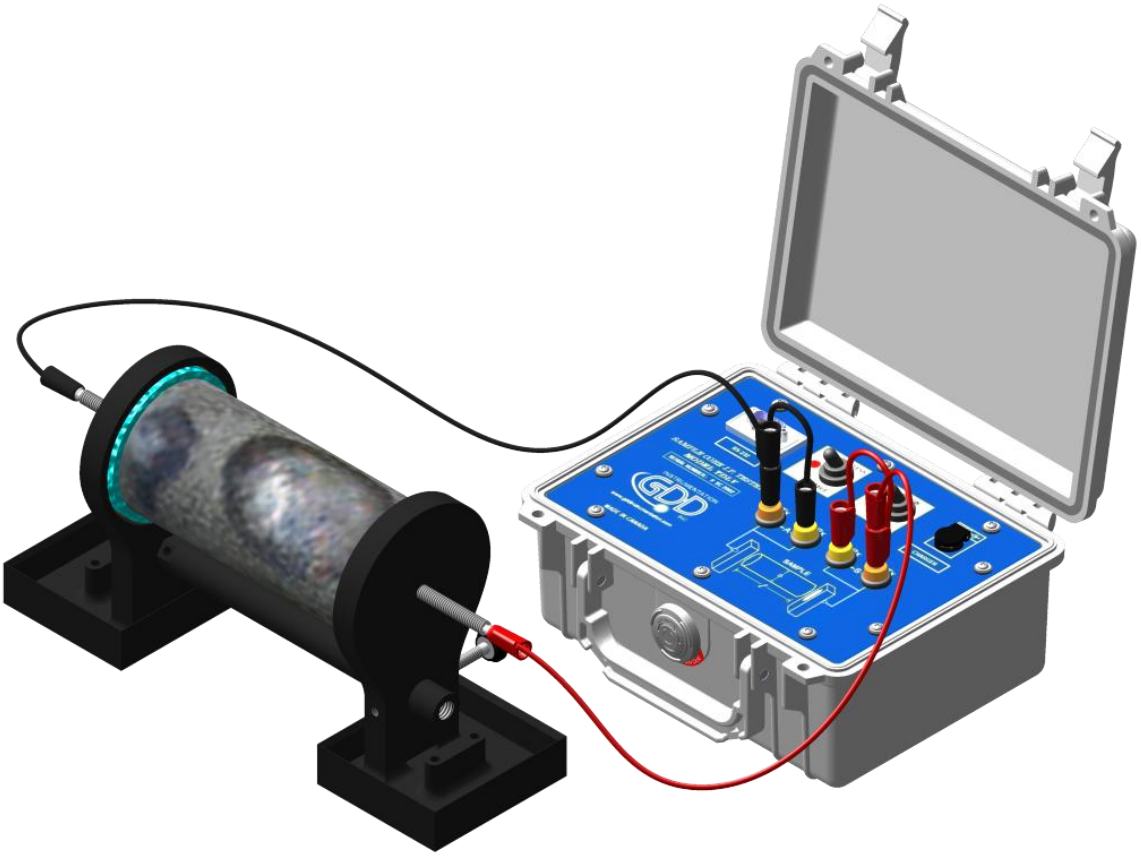
5. Place the core sample between the sponges and affix the core holders by using the fixing screw.



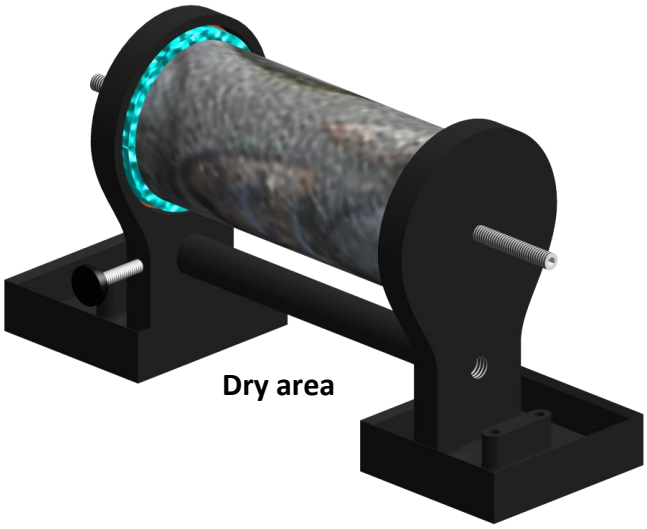
6. On the SCIP tester, connect Tx-A with Rx-A and Tx-B with Rx-B.



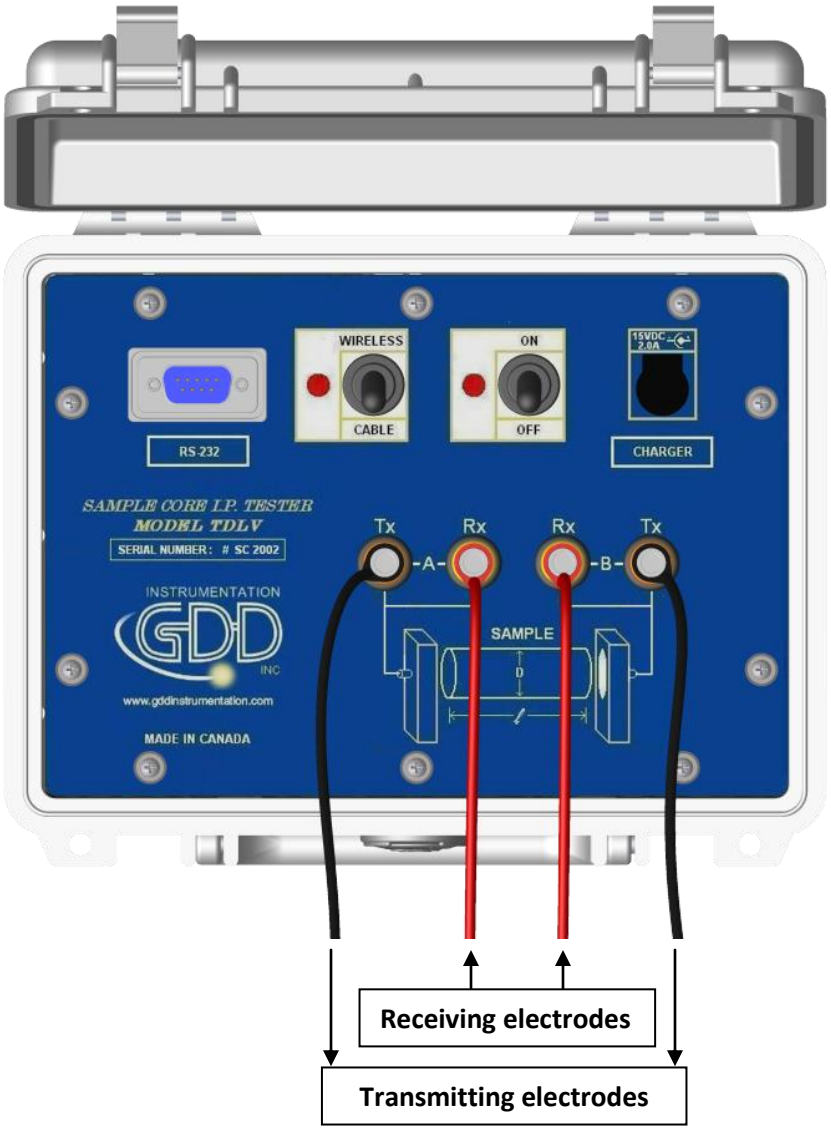
7. Connect electrodes A and B to the Core Holders.



8. During the whole measurement process, **the surface between the core holders should always be completely dry**.



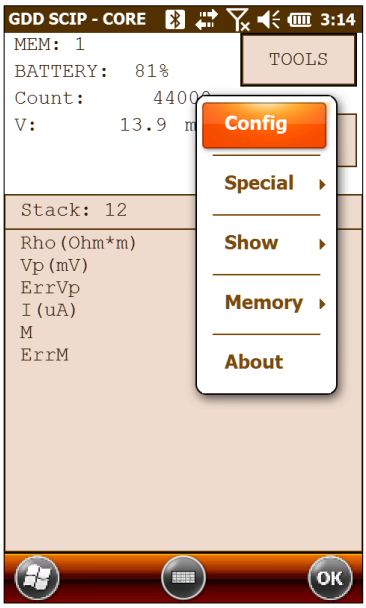
If you need four electrodes to be able to use your own core holders with the GDD SCIP tester, or to use the SCIP as a field IP Tester (see Section 8.2), use the two Tx connectors on the SCIP tester for transmitting and the two Rx connectors for receiving.



It is important to clean the Core_Holder after each use to prolong its lifespan.

8 Tools menu

Click TOOLS to select one of the following options:



Config

Use the CONFIG option to change:

- Core sample parameters
- Transmitter voltage
- Signal timing
- Mode

Special

Use the SPECIAL option to:

- Re-initialize the communication between the SCIP tester and the Archer2 Field PC
- Use the SCIP Tester as a low voltage transmitter only
- Use the SCIP Tester as a field IP tester

Show

Use the SHOW option to display:

- Hotkeys (shortcut keys)
- Signal graph
- Decay curve
- Windows chargeability

Memory

Use the MEMORY option to:

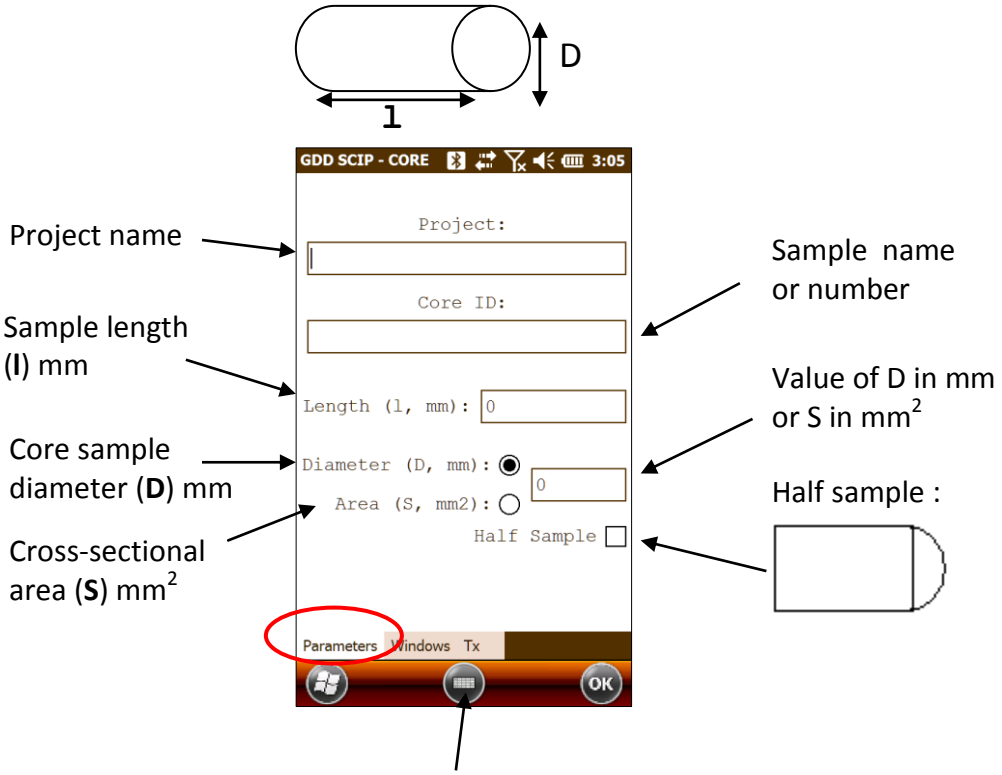
- See the History
- Recall the previous memory
- Clear the memory
- Save data in a file

About

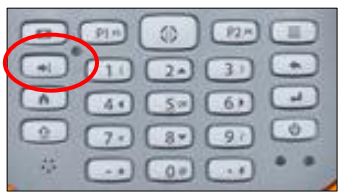
Use the ABOUT option to display SCIP tester software version number.

8.1 Config Option

The Parameters section is used to set the core sample parameters:



Open the keyboard at the bottom of the screen by clicking on it. You can also use the numeric keypad of the Archer2 Field PC to enter numeric values. Use the tab key ⇥ to advance the cursor to the next tab stop.

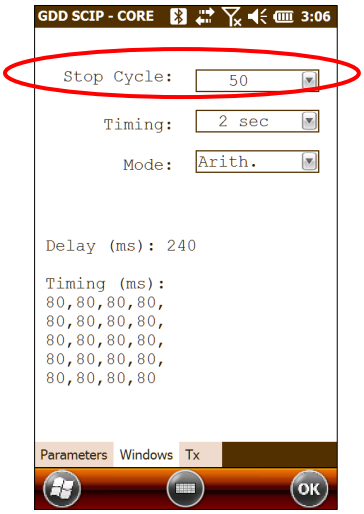


For a core sample, select Diameter and enter the diameter of the cross section in mm. If you measure a half core sample, select Half Sample.

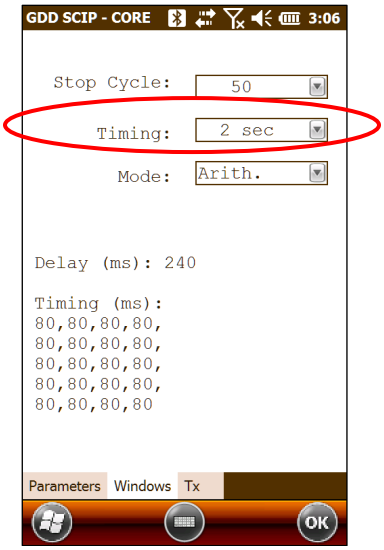
For any other type of sample, enter the cross-sectional area in mm^2.

Use the Windows section to set the signal timing and the mode.

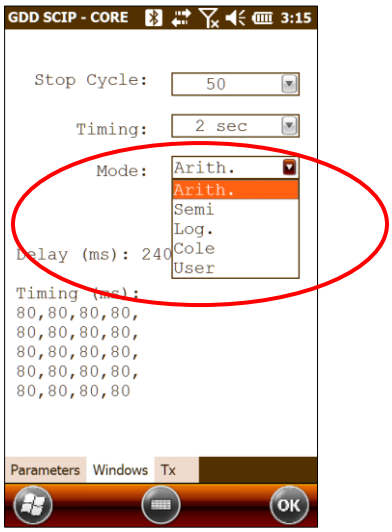
Set the maximum number of stacks.



Set the signal timing.



Select the mode.



Here are the different modes you can use:

- Arithmetic

  Windows: 20
  Delay (ms): 240
  Timing (ms): 2000
  80, 80, 80, 80, 80, 80, 80, 80, 80, 80,
  80, 80, 80, 80, 80, 80, 80, 80, 80, 80

- Semi logarithmic

  Windows: 20
  Delay (ms): 40
  Timing (ms): 2000
  40, 40, 40, 40, 40, 40, 80, 80, 80, 80,
  80, 80, 80, 160, 160, 160, 160, 160, 160, 160

- Logarithmic

  Windows: 4
  Delay (ms): 160
  Timing (ms): 2000
  120, 220, 420, 820

- Cole

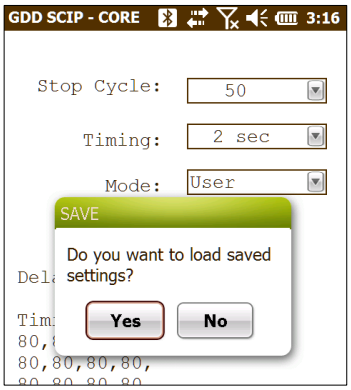
  Windows: 20
  Delay (ms): 20
  Timing (ms): 2000
  20, 30, 30, 30, 40, 40, 50, 60, 70, 80,
  90, 100, 110, 120, 130, 140, 150, 160, 180, 200

- User defined

  Windows: between 1 and 20
  Delay (ms): user defined (20ms or more)
  Timing (ms): user defined (20ms ore more)

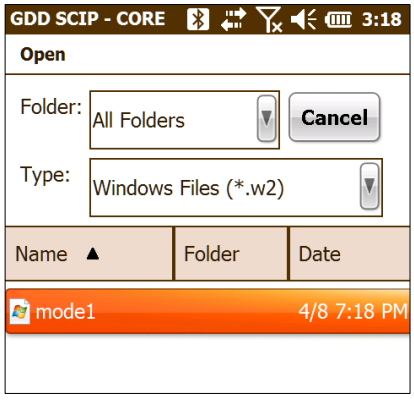
In the USER mode, you can load settings you have saved before, or you can create new settings.

After selecting User Mode, the program asks you if you want to load saved settings.

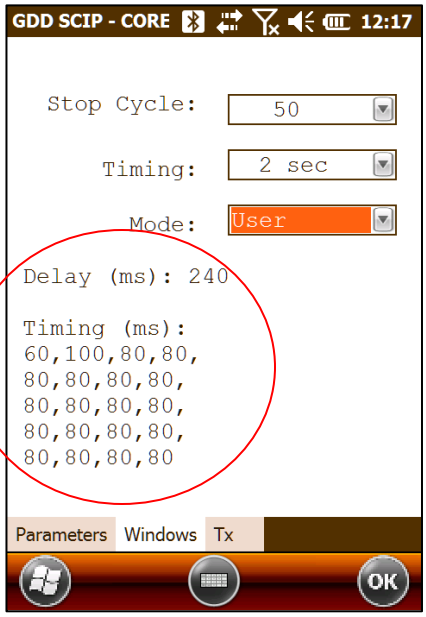


- If you select YES :

  The program will prompt you to select the saved settings to load. Click on the file you need.

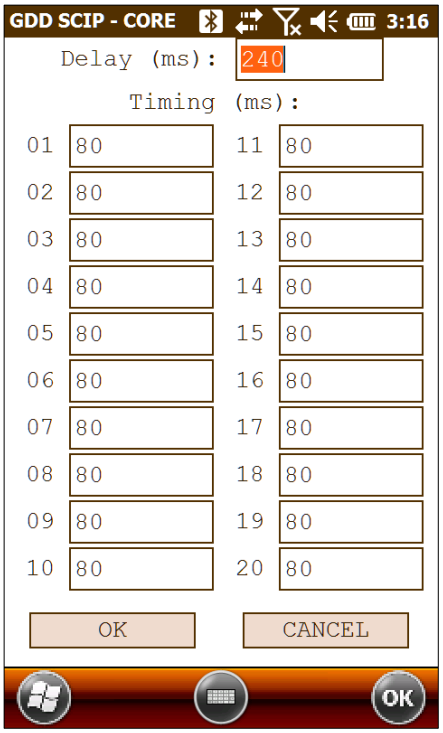


The loaded settings will be displayed in this window.

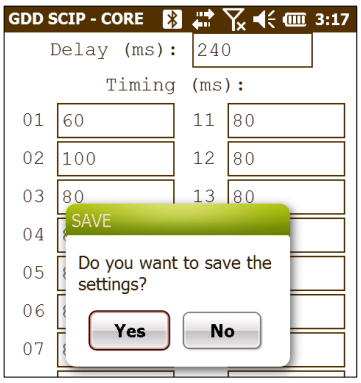


- If you select NO :

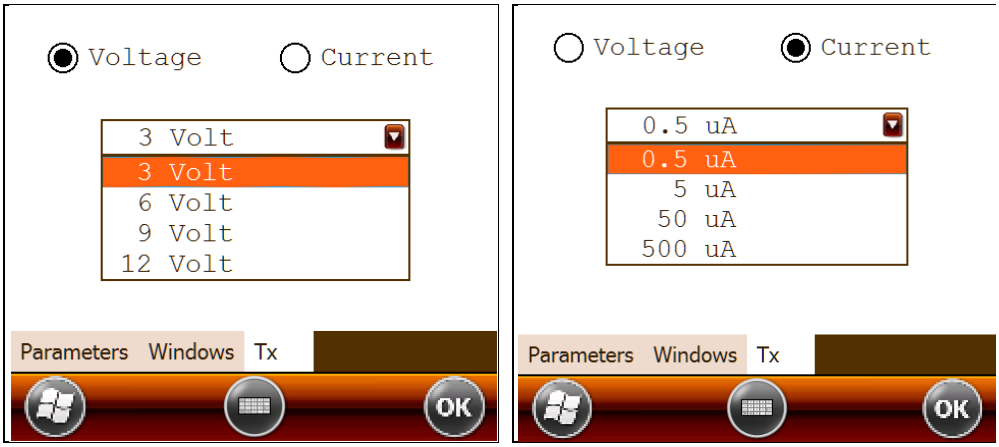
The program will lead you to this window where you can modify the length of the windows.



After entering the windows size, click on OK button. You will be prompted to save your settings. Select ‘Yes’ to save your settings.



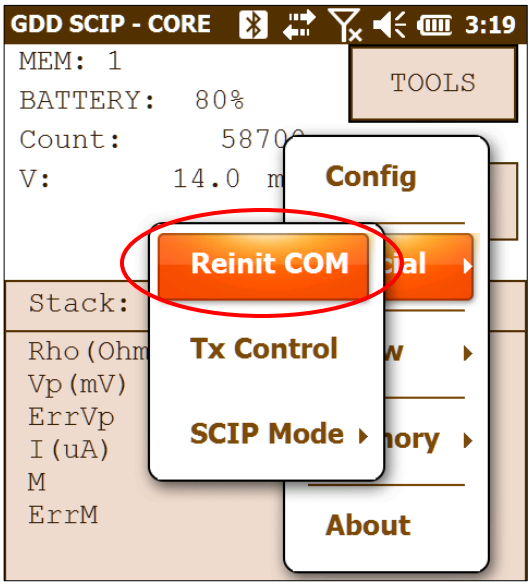
The TX section is used to set the transmitter fixed voltage between 3, 6, 9 and 12 volts or fixed current between 0.5, 5, 50 or 500 µAmps.



8.2 Special options

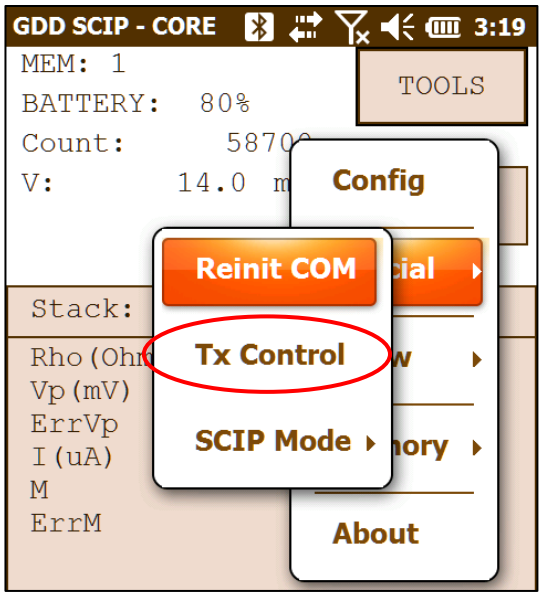
Reinit COM

Select *Reinit COM* to re-initialize the communication between the SCIP tester and the Archer2 Field PC. This option is useful to reinitialize the Bluetooth link if the SCIP has been turned off and on again.

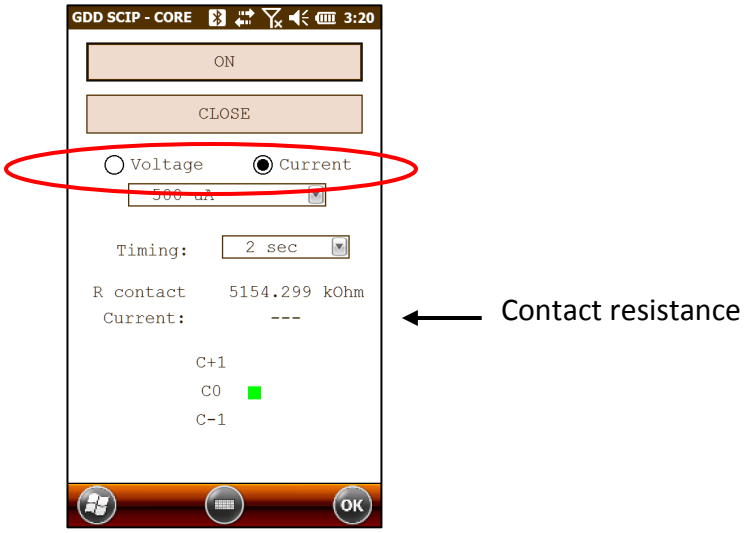


Tx Control

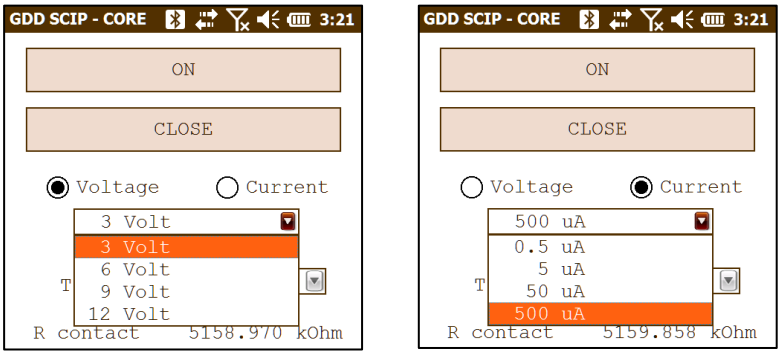
Select *Tx Control* if you need to use a low voltage transmitter only (without a receiver).



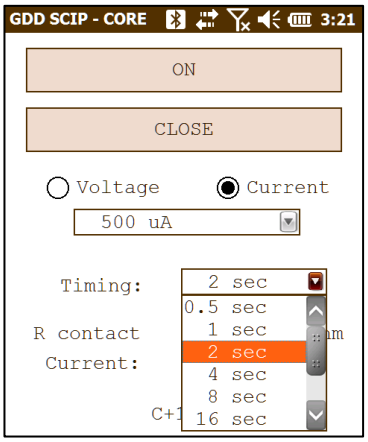
Select Voltage if you need a constant voltage, or Current if you need a constant current. The contact resistance appears automatically.



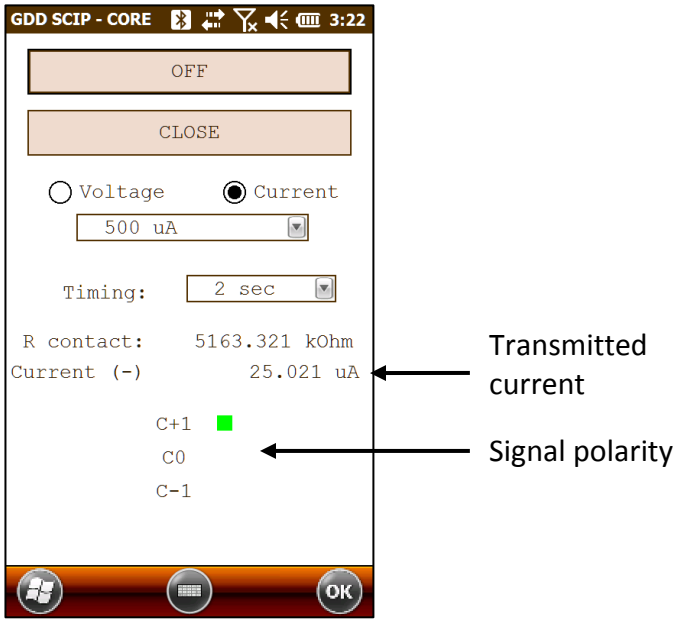
Select the value of the constant voltage or the value of the constant current you need to transmit.



Select the timing.

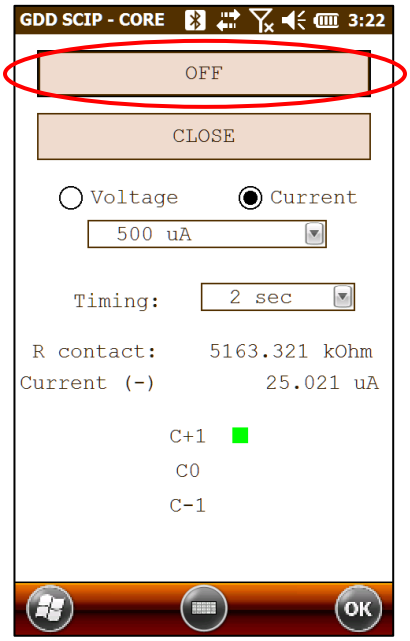


Click on the ON button to turn the transmitter on. The transmitted current appears. The little green square indicates the transmitted signal polarity.

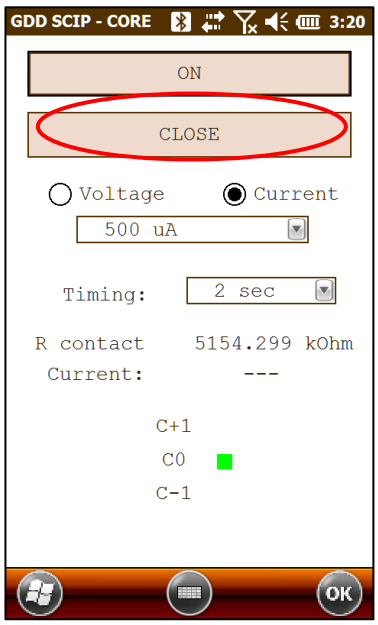


You cannot change the value of the transmitted voltage or transmitted current while the transmitter transmits.

Click on the OFF button to stop the transmitter.

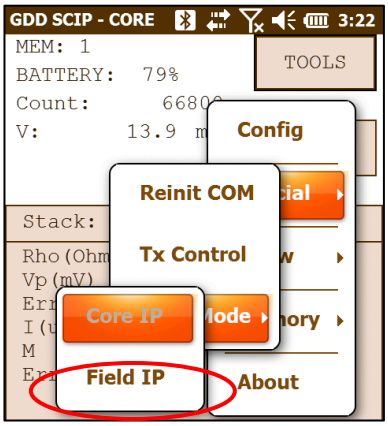


Click on the CLOSE button to quit the *Tx Control* option.

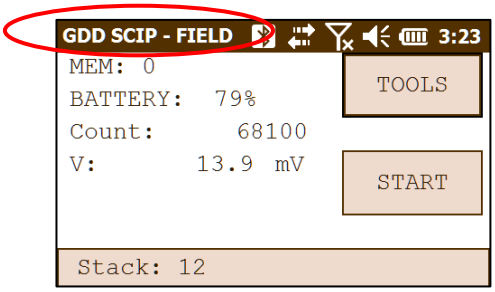


SCIP Mode

Select *SCIP Mode* and *Field IP* if you want to use the SCIP Tester as a Field IP Tester.

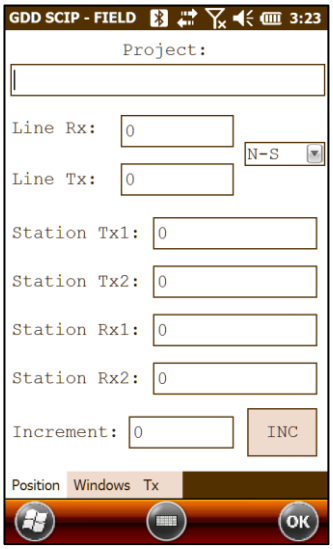


The title of all windows will turn into GDD SCIP Field.

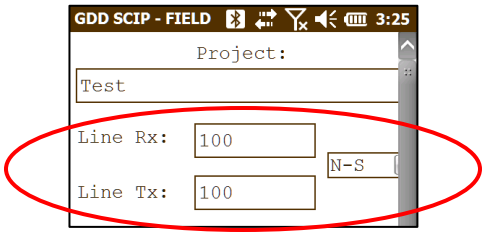


Follow steps 8 to 10 of Section 6 – Quick Start Guide to begin the measuring process.

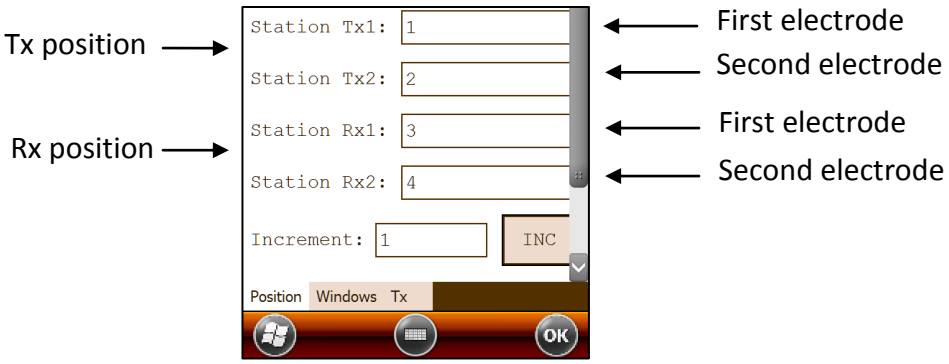
For step 11, set these parameters: Tx line number, Rx line number, line direction, transmitter position and receiver position.



Enter a line number and select the line direction. A negative number cannot be entered for the line; the labels N, S, E and W are used to define the direction.



Enter the transmitter and receiver electrodes position. A negative number is used to define South and West. Use the *Increment* setting to increment all stations evenly at the same time. Enter the number of the increment and click on the *INC* button to increment all stations.



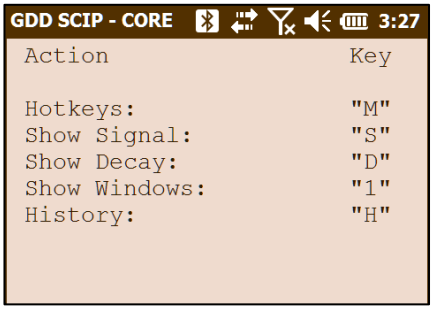
Follow steps 12 to 21 of Section 6 – Quick Start Guide to complete the measuring process.

8.3 Show Options

For the Show Signal, Show Decay and Show Windows options, you have to wait until Step 15 of Section 6 – Quick Start Guide before using them.

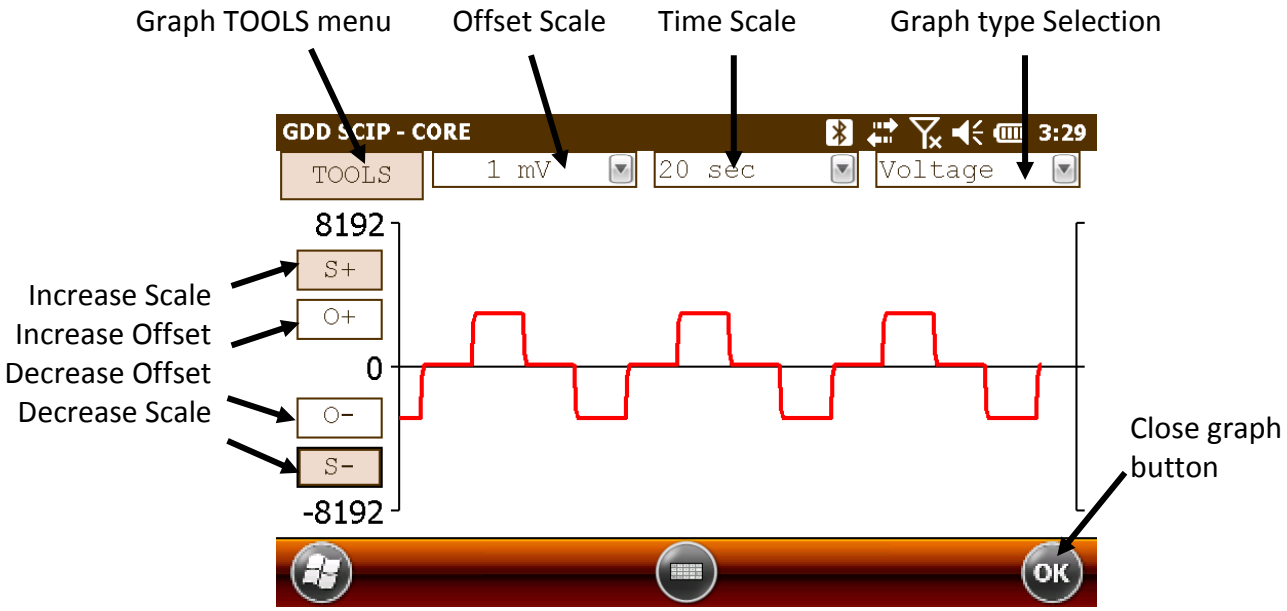
Hotkeys

This feature is useful if you are using an Allegro CX or Allegro MX PDA.

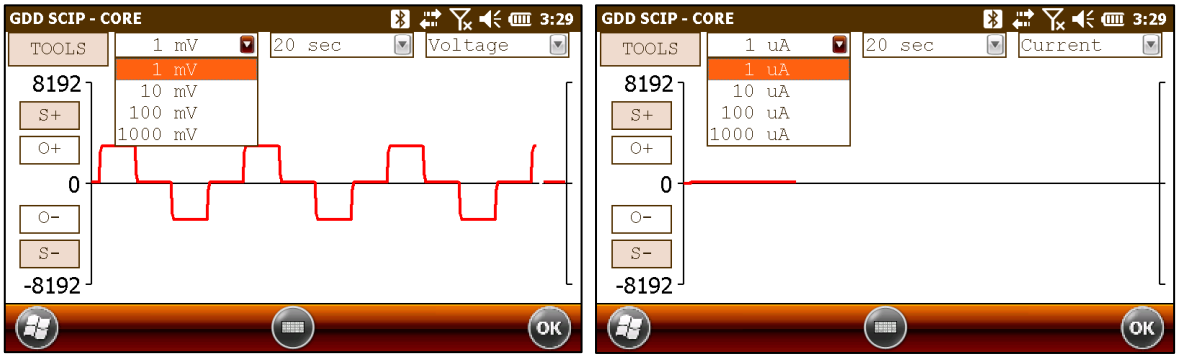


Show Signal

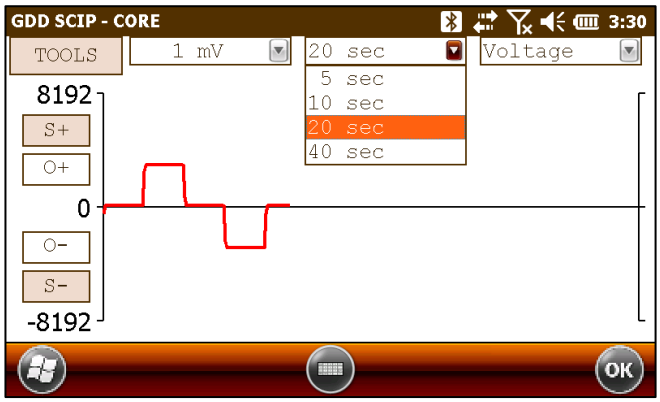
The Show Signal option is used to display the signal graph of the transmitted voltage or the signal graph of the current that is passing through the core sample.



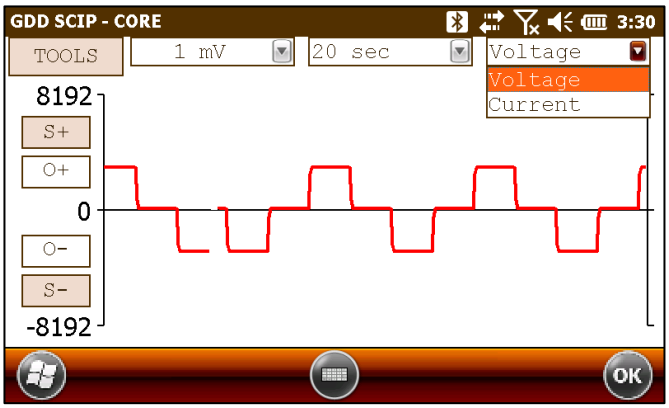
1. Select offset scale. The offset is in mV for the Voltage graph and in uA for the Current graph.



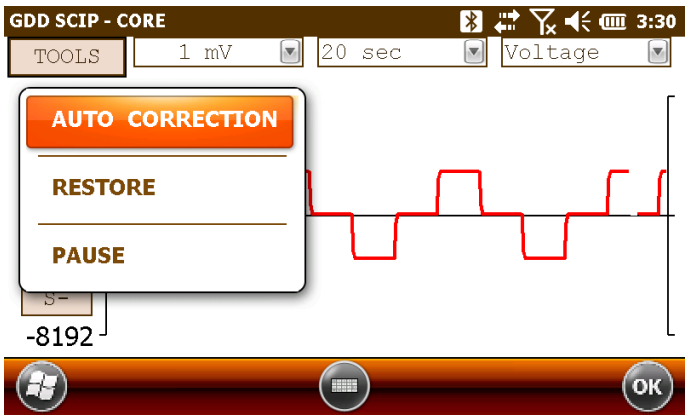
2. Select time scale.



3. Select graph type



4. TOOLS menu :



Auto Correction

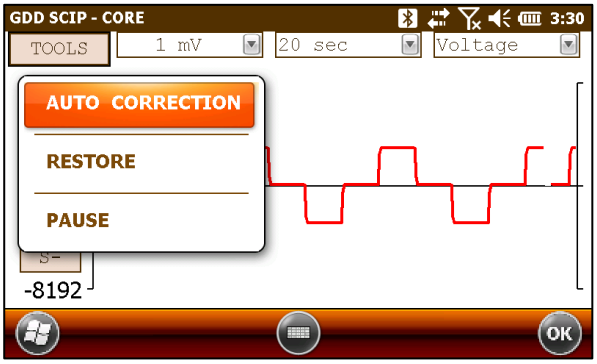
The AUTO CORRECTION option is used to optimize the graph scale and correct the offset of the signal. This option should be used after one signal period (8 secs for a 2 sec time base).

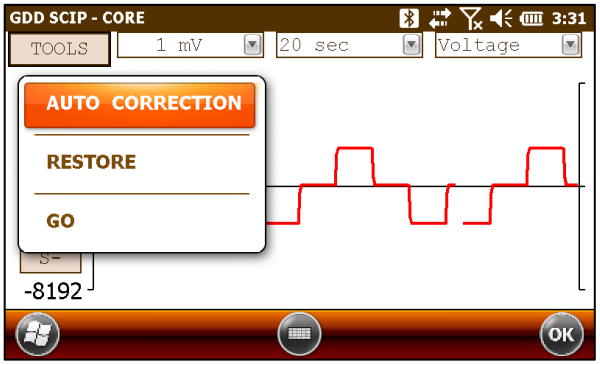
Restore

The RESTORE option is used to reset the default settings.

PAUSE/GO

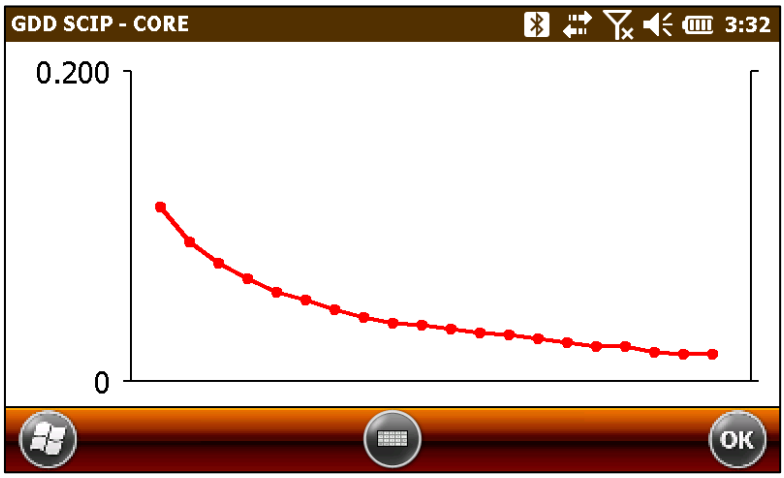
The PAUSE/GO option is used to pause or play the signal.





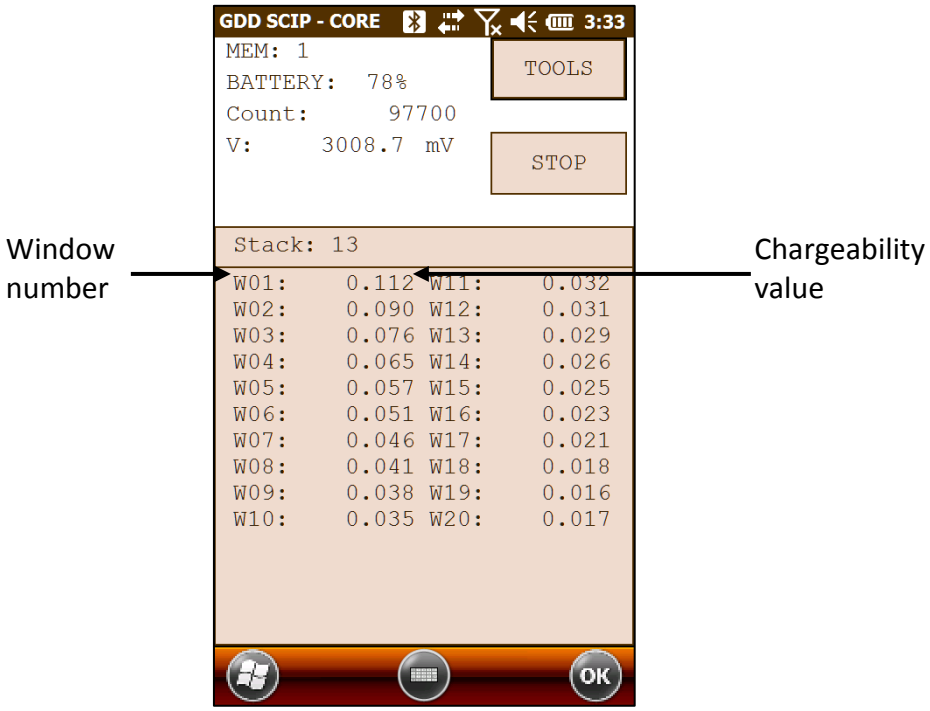
Show Decay

The Show Decay option is used to display the decay graph.



Show Windows

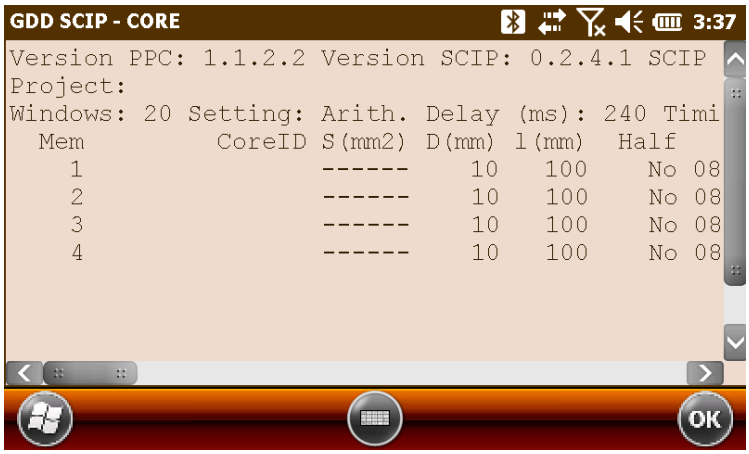
The Show Windows option is used to display the windows chargeability.



8.4 Memory Option

History

The History option is used to display all the data saved in the memory.



If you scroll all the way down, you will see the following information.

```
Version PPC: 1.1.2.2 Version SCIP: 0.2.4.1 SCIP SN: 2122
Project:
Windows: 20 Setting: Arith. Delay (ms): 240 Timing (ms): 80, 80, 80, 80, 80, 80, 80, 80, 80, 80, 80, 80, 80, 8
  Mem         CoreID S(mm2) D(mm) l(mm)  Half       Date     Time  Contact(kOhm) Rho(Ohm*m)    Vp(mV)  ErrVp
    1               ------    10   100    No 08/04/2014 15:11:19       5158.028   4024.811 12763.008  0.047
    2               ------    10   100    No 08/04/2014 15:33:53       5143.086   4010.847  3005.486  0.003
    3               ------    10   100    No 08/04/2014 15:34:57       5143.861   4014.158  6008.125  0.036
    4               ------    10   100    No 08/04/2014 15:35:45       5149.527   4008.642  9010.504  0.019
```

```
0, 80, 80, 80, 80, 80, 80
      M  ErrM       I(uA) Time Stack      M01      M02      M03      M04      M05      M06      M07      M08
  0.040 0.000       2.491 2000    12    0.104    0.084    0.071    0.061    0.054    0.048    0.044    0.039
  0.042 0.000       0.589 2000    23    0.112    0.090    0.076    0.065    0.056    0.051    0.046    0.041
  0.044 0.000       1.176 2000     6    0.112    0.091    0.075    0.065    0.057    0.051    0.046    0.043
  0.042 0.000       1.765 2000     3    0.111    0.090    0.077    0.065    0.057    0.052    0.046    0.041
```

```
  M09      M10      M11      M12      M13      M14      M15      M16      M17      M18      M19      M20
0.036    0.033    0.030    0.028    0.026    0.025    0.023    0.021    0.020    0.019    0.019    0.017
0.037    0.034    0.031    0.030    0.028    0.026    0.024    0.024    0.021    0.020    0.018    0.017
0.039    0.036    0.033    0.030    0.029    0.027    0.026    0.025    0.022    0.022    0.020    0.020
0.038    0.034    0.033    0.029    0.027    0.026    0.023    0.022    0.022    0.020    0.018    0.018
```

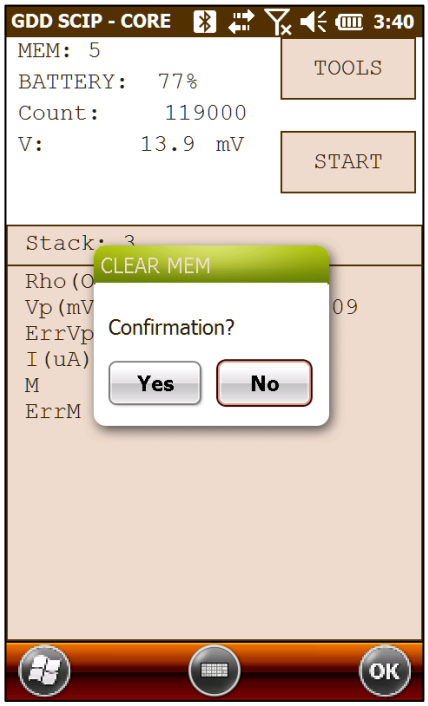
Back Mem

The Back Mem option is used to clear the last readings of the memory one by one.

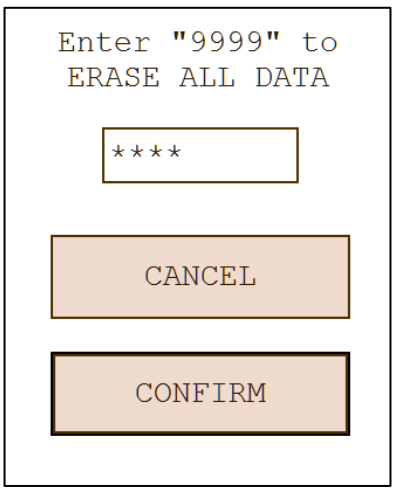
Clear Mem

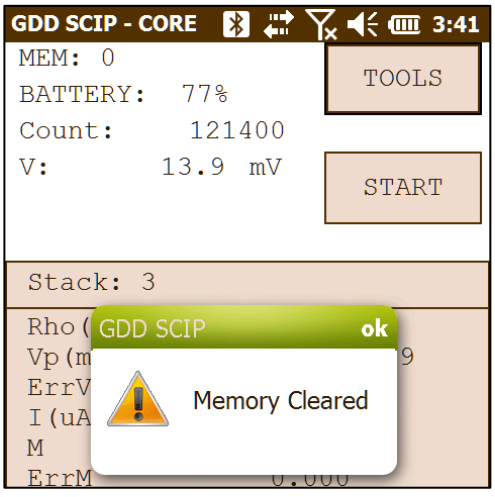
The Clear Mem option is used to clear all the readings of the memory. **Make sure that you have created a file with your saved readings before erasing the readings**.

Click 'Yes' to confirm the operation.



Enter '9999' in the text box and click 'Confirm' to clear the memory.



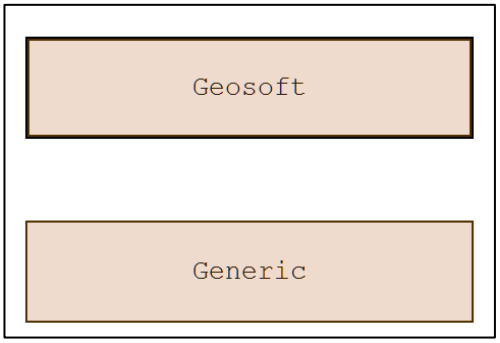


Save File

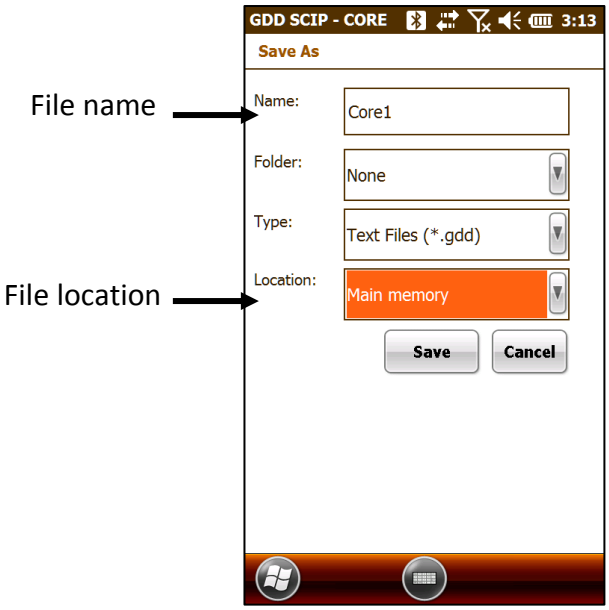
The Save File option is used to create a file with your saved readings.

The usual file created with the SCIP Tester program is the *Generic* file with .gdd extension (see Annex 1 for an example of the .gdd file).

It is also possible to get a file compatible with *Geosoft* software by selecting *Geosoft*. The extension of this file is *.dat*. By selecting Geosoft, you will get both a *.dat* file and a *.gdd* file.



You have to enter a File Name and a location for this file.



Click on Save to create your file.

You can now clear the readings of the memory (Clear Mem Option) before starting a new measurement process.

9 Transferring data

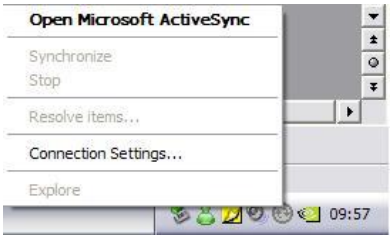
If you run Vista or Windows 7 on your computer, install Windows Mobile Device Center 6.1 from the CD-ROM provided by GDD to sync content between your PDA and your computer. Or you can download it for free from Microsoft website. Use ActiveSync if you run Windows XP or earlier.

9.1 ActiveSync installation and settings

1. In order to establish communication between the Archer2 and a desktop PC, you need to install the ActiveSync software, which is available on the CD supplied by GDD.

2. Once ActiveSync is installed, a gray icon appears in the bottom right corner of your desktop PC screen.

3. Right click on the *ActiveSync* icon to open the following menu and select *Connection Settings...*



4. Check *Allow USB connection with this desktop computer*.

9.2 Connecting the Archer2 with a desktop PC

1. Turn the PDA *ON*

2. Connect the USB cable between the Archer2 PDA and your desktop computer.

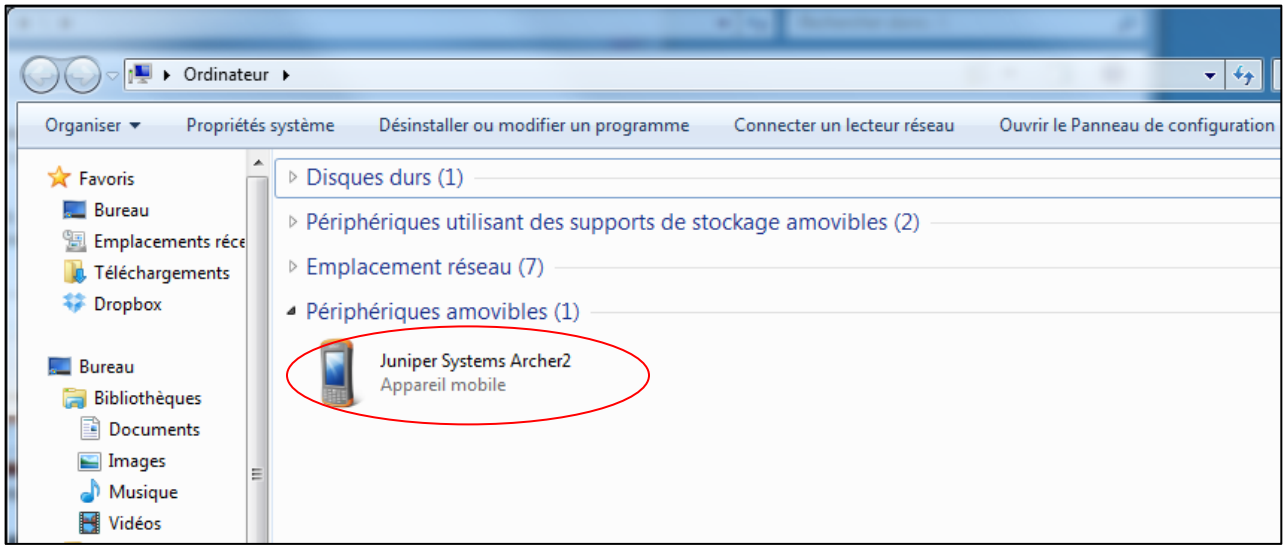
3. The desktop *ActiveSync* (or Windows Mobile Device Center) icon is now green.

4. A small *PCLink* icon appears on the Archer2 title bar.

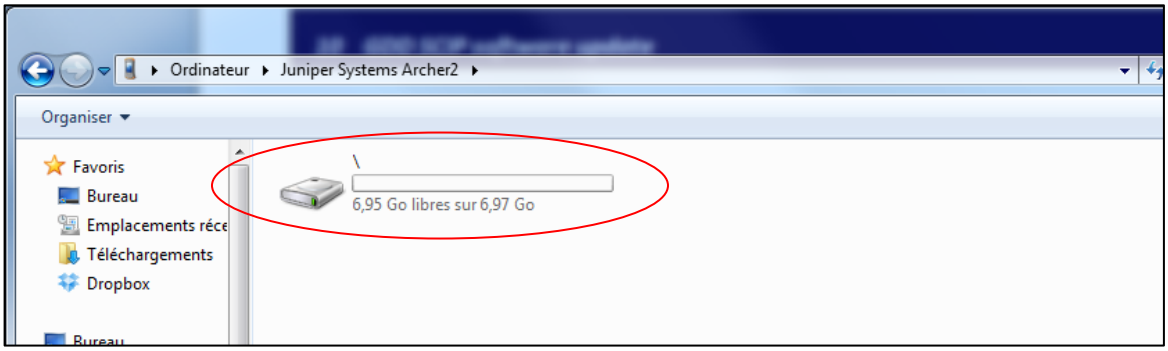
9.3 Transferring file(s) from the Archer2 PDA to a desktop PC

1. Double click on the *My Computer* icon on your desktop PC.

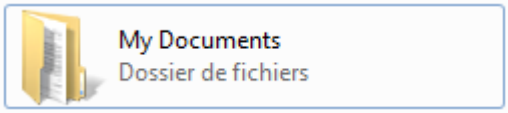
2. Double click on the *Mobile Device's* icon.



3. Double click on the *Main folder* icon.

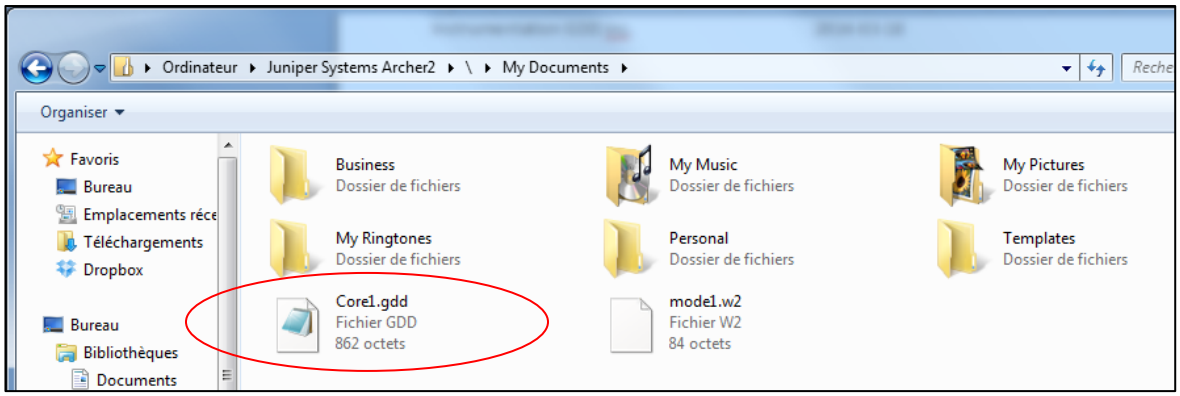


4. Double click on the *My Documents* folder.



5. Use the drag and drop or cut, copy and paste functions to move file(s) between your Archer2 and your desktop PC.

   The data file is named: File_Name.gdd



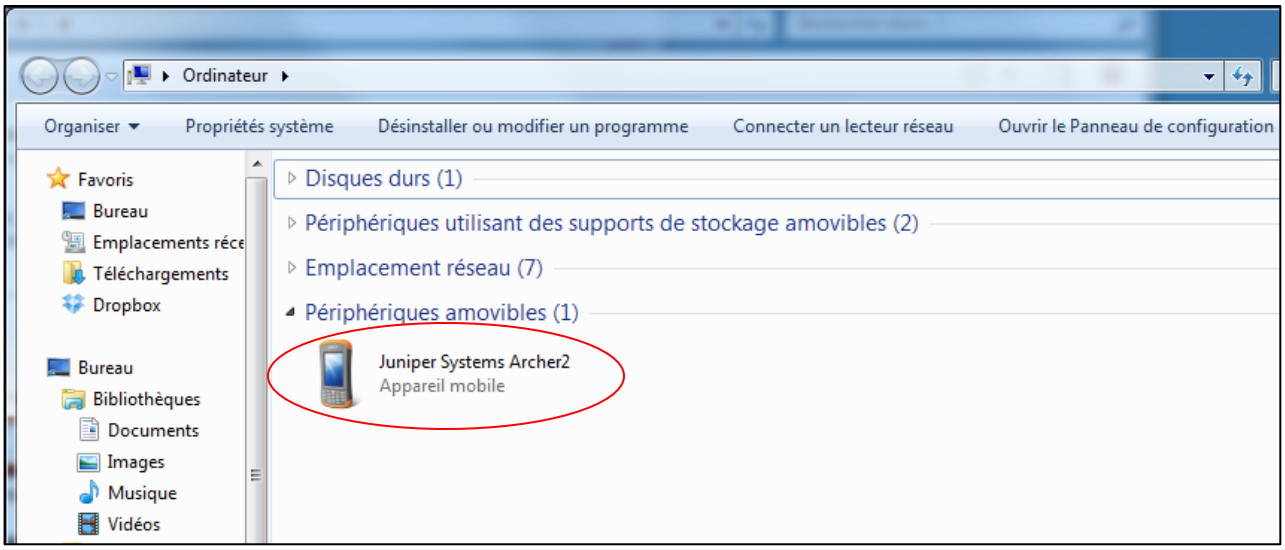
6. Open the saved files with Notepad or Excel.

10 GDD SCIP software update

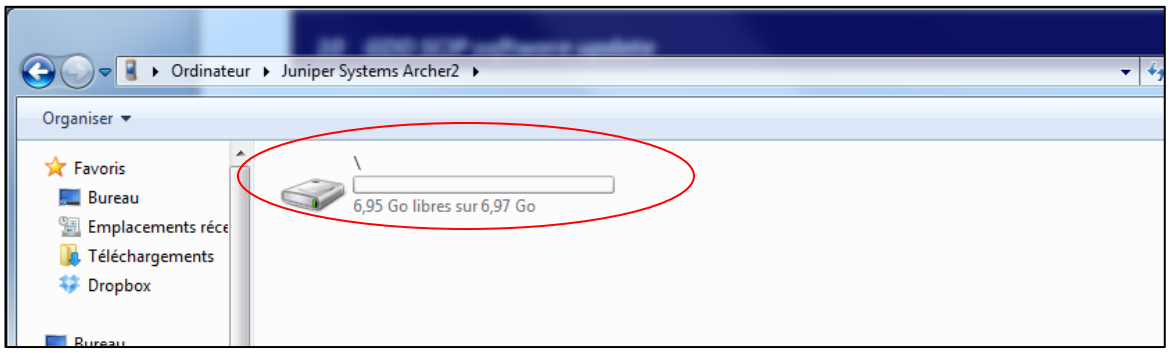
1. Connect the USB cable between the Archer2 Field PDA and your desktop computer.

2. Double click on the *My Computer* icon on your PC's desktop .

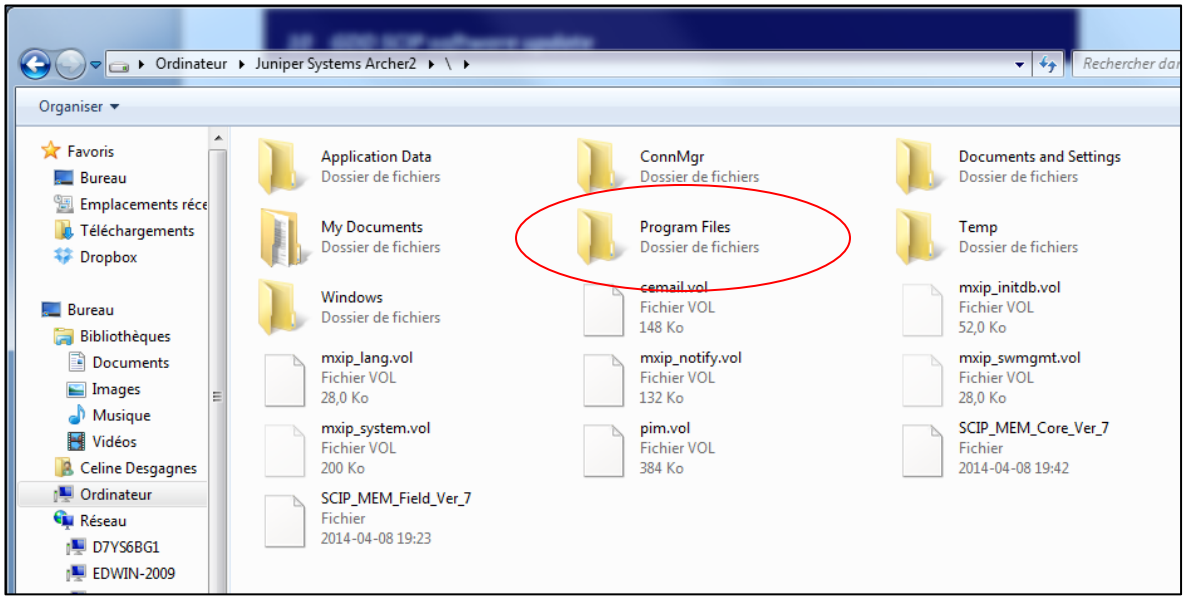
3. Double click on the *Mobile Device* icon.



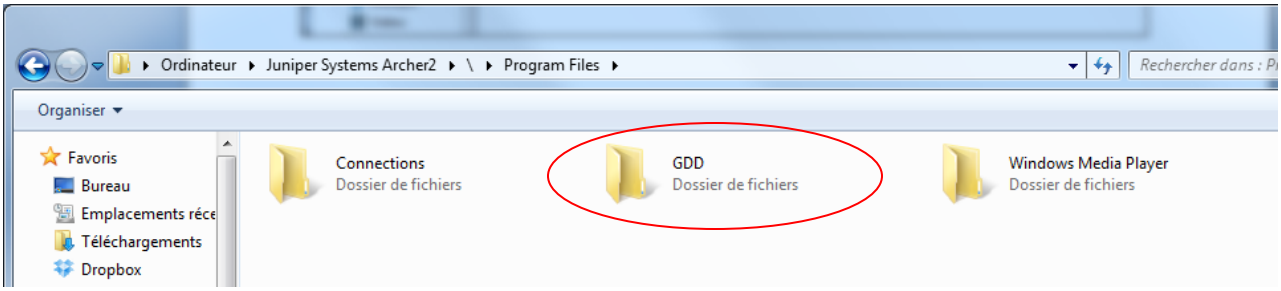
4. Double click on the *Main folder* icon.



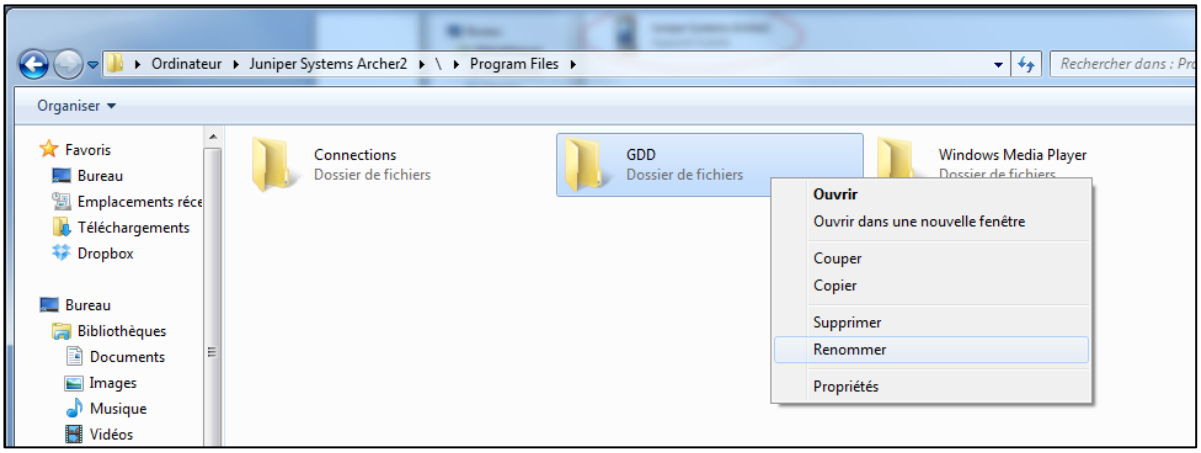
5. Double click on the *Program Files* icon.



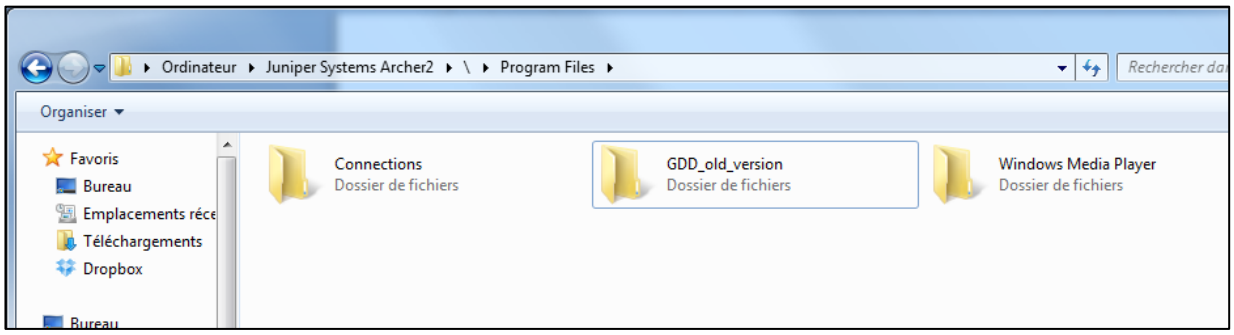
6. The GDD SCIP program files are located in the GDD folder.



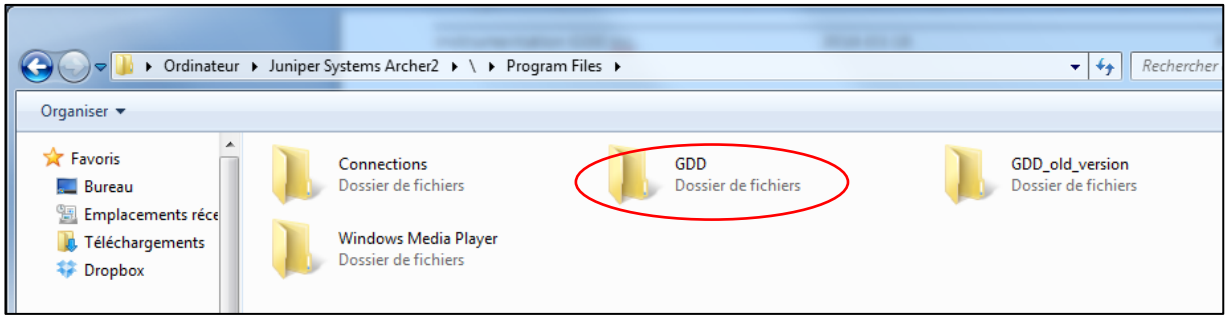
7. Rename the old version of the software to keep a backup on your Archer2 PDA. Right click on the GDD folder and select Rename.



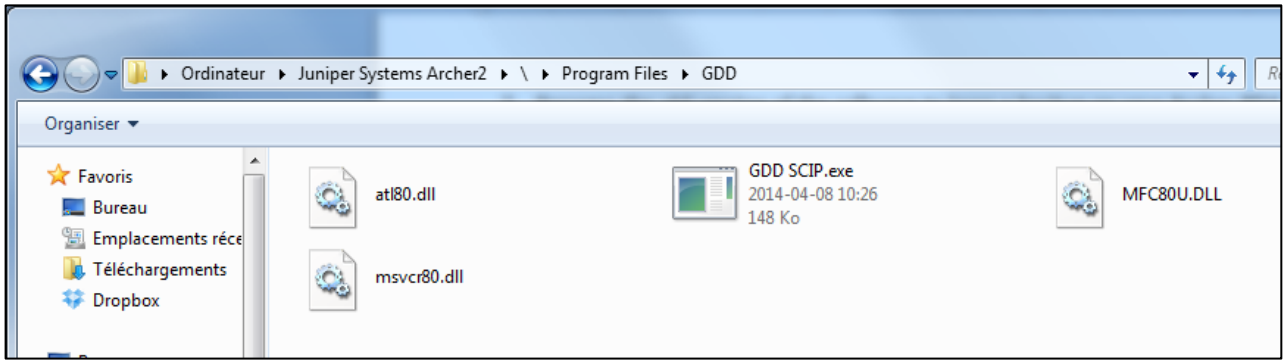
8. Rename the folder (example: GDD_ Old_Version).



9. Right click on the *Program Files* window and create a new GDD folder.



10. Use the drag and drop or the copy and paste functions to move the new GDD SCIP software files from your computer to your Archer2 PDA's new GDD folder .



11 Troubleshooting

11.1 Problems

This section explains some problems that could occur while using the SCIP tester as well as some proposed solutions.

For any issues regarding the Archer2 Field pocket PC other than those related to the GDD program, please refer to Archer2 PDA user's manual available on the Archer2 User Documentation CD, sent by GDD.

➢ Problem :

The SCIP tester does not turn on when the On-Off switch is at 'On'.

✓ Solution :

- If the SCIP tester's battery power rating is below the critical threshold, the SCIP tester will not come on line. (See the Power section for more details.)

➢ Problem :

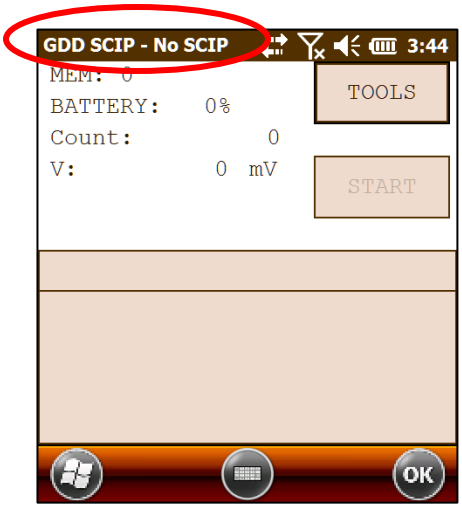
The message "Battery Error" appears on the main screen of the SCIP program on the Archer2 PDA.

✓ Solution :

- A problem has occured while charging the SCIP battery: over voltage, charging under 0°C or over 45°C, the charging time was too long, the battery is defective, etc.
- Try to disconnect and re-connect the AC charger.

➢ Problem :

The message: 'NO SCIP' is shown in the program bar of the SCIP program. It stays on the bar even if the SCIP tester is connected to the Archer2 PDA.

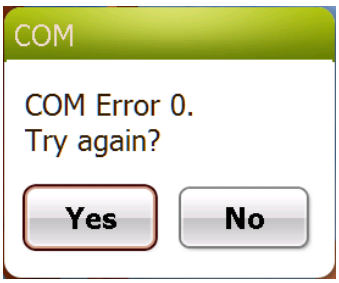


✓ Solution :

- Check that the SCIP tester's On-Off switch is at On and that the LED is on.
- Verify that the SCIP tester's battery is powered enough and not within the critical threshold limit.
- In Cable mode, verify that the cable is plugged correctly into the SCIP tester and into the Archer2 pocket PC.
- In Bluetooth mode, check if a Bluetooth Partnership has been established between your SCIP Tester and your Archer2 PDA (see Section 11.2 – Bluetooth Partnership).

➢ Problem:

In **Bluetooth** mode, a **COM Error** message appears:



✓ Solution :

- Look at the Bluetooth icon in the Dashboard:

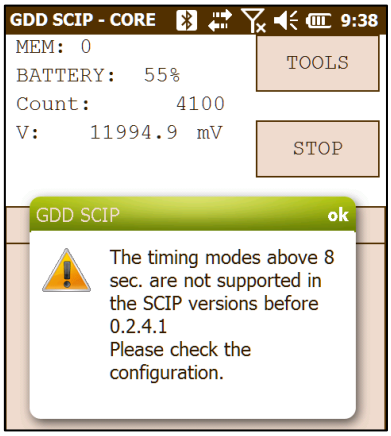
If it is gray, click on the icon to enable it.

Try to start the SCIP software in Bluetooth mode again.

- The Cable / Wireless switch of the SCIP tester must be in the Wireless position and the SCIP tester must be ON.
- Check if the SCIP's battery is sufficiently charged. The Bluetooth mode requires more power than the Cable mode.
- Check if a Bluetooth Partnership has been established between the Archer2 PDA and the SCIP tester (see Section 11.2 – Bluetooth Partnership).

➢ Problem :

This message appears when clicking on START to begin the measuring process:



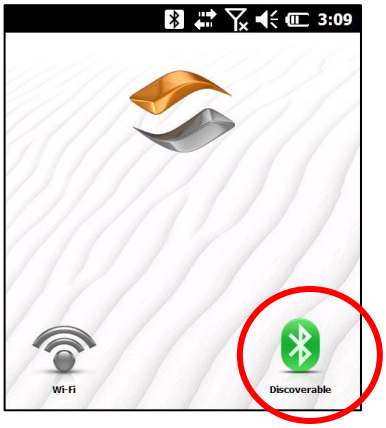
✓ Solution :

Click *OK* to close the pop-up window. Go to *TOOLS | Config | Windows* and select a timing of 0.5, 1, 2, 4 or 8 seconds.

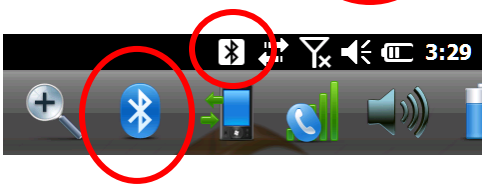
11.2 Bluetooth Partnership

To avoid wasting time searching for Bluetooth devices, a Bluetooth partnership must be established between the Archer2 PDA and the SCIP tester before connecting. **This partnership was set up by GDD before the unit was sent out**. However, it is possible that you might have to reconfigure it and here are the instructions:

1. Turn on the SCIP tester and place the **Cable/Wireless** switch in Wireless position.
2. Turn on the Archer2 Field PC.

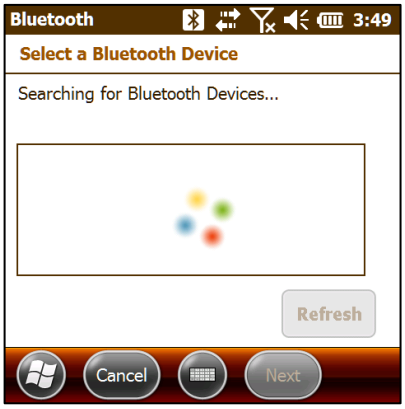


3. Make sure the Bluetooth is on. If the icon is gray, click on the icon to enable it.



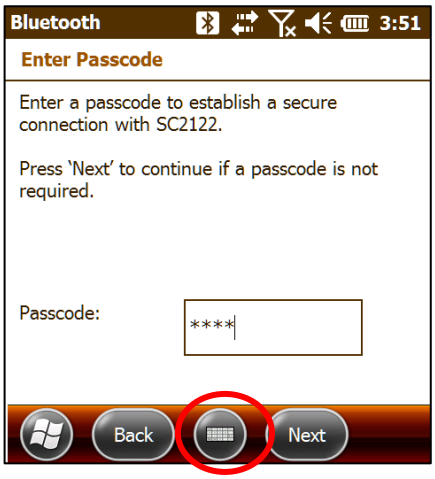
4. Click on the Bluetooth icon in the Title Bar.

5. Click on Add new device...



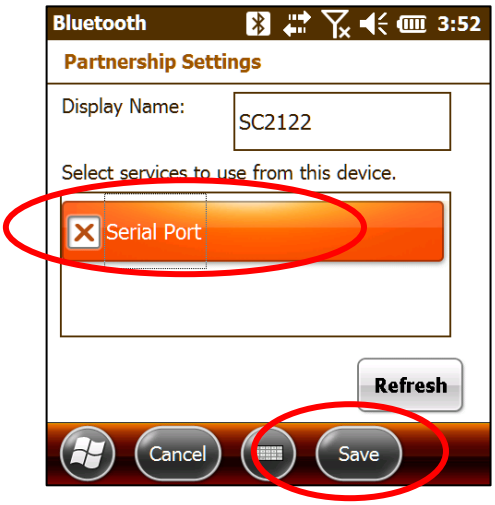
6. The program will search for Bluetooth Devices. This step may take a few seconds.

7. Select the SCIP's name (SCXXXX) and click on **Next**.



8. Enter the passcode **1234** and click **Next**. Open the virtual keyboard or use the numeric keypad of the Archer2 PC.

9. This message may appear for a few seconds. Click on *Advanced* or wait until it disappears and click on your SCIP name.

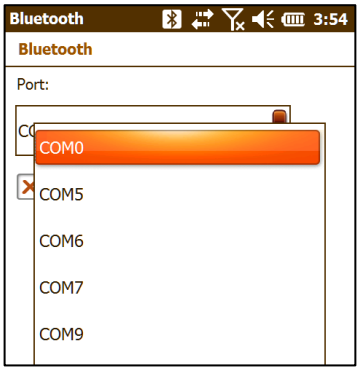


10. Check *Serial Port* and click on *Save*.

11. Select *COM Ports*.

12. Click on *New Outgoing Port*.

13. Select your SCIP's name and click on *Next*.



14. Open the port menu.

15. Select *COM9* and click *Finish*.

16. The name of your SCIP tester should appear with the *COM9* tag. Click on the *Ok* button to close the window.

17. The connection between the Archer2 PDA and the SCIP tester is now possible via the Bluetooth operating mode.

12 Technical help

If you encounter a problem not described in this manual, do not hesitate to contact **Instrumentation GDD Inc.** for help at:

Tel.: (418) 877-4249
Fax: (418) 877-4054
Toll free line: 1 877 977-4249
e-mail: gdd@gddinstrumentation.com

Emergency out of business hours:

Pierre Gaucher:	Home phone:	(418) 657-5870
	Cell phone:	(418) 261-5552
Régis Desbiens:	Home phone:	(418) 658-8539
	Cell phone:	(418) 570-3408

Any GDD SCIP tester that breaks down while under warranty or service will be replaced free of charge upon request for the duration of repairs, except for shipping fees. This service is subject to instrument availability but we have been able to honour this commitment up to now.

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Annex 1 – Example of Generic Data File

Version	PPC:	1.1.1.19	Version	SCIP:	0.2.1.3	SCIP	SN:	2011
Project:	Quality	Test						
Windows:	20	Setting:	Arith.	Delay	(ms):	240	Timing	(ms):

	Mem	CoreID	S(mm2)	D(mm)	l(mm)	Half	Date	Time	Contact(kOhm)	Rho(Ohm*m)	Vp(mV)	ErrVp	M	ErrM	I(uA)	Time	Stack	M01
	1	100k-1u	------	10	100	No	12-01-10	16:02:14	38.457	78.553	2967.219	0.028	8.242	0.001	29.667	2000	5	76.189
	2	100k-1u	------	10	100	No	12-01-10	16:03:04	36.998	78.589	5926.151	0.031	10.792	0.002	59.224	2000	5	95.818
	3	100k-1u	------	10	100	No	12-01-10	16:04:12	36.531	78.303	8882.237	0.198	11.246	0.002	89.091	2000	5	96.617
	4	100k-1u	------	10	100	No	12-01-10	16:05:11	36.833	78.265	11835.915	0.164	11.455	0.005	118.775	2000	5	96.434
	5	100k-1u	------	10	100	No	12-01-10	16:06:05	36.435	78.141	49.429	0.003	6.328	0.111	0.497	2000	5	59.905
	6	100k-1u	------	10	100	No	12-01-10	16:07:14	37.178	78.761	496.353	0.037	7.149	0.002	4.950	2000	5	67.922
	7	100k-1u	------	10	100	No	12-01-10	16:09:30	37.301	78.546	4968.129	0.078	10.290	0.008	49.677	2000	5	92.456
	8	100k-1u	------	10	100	No	12-01-10	16:10:56	37.090	78.265	12856.770	0.222	11.092	0.005	129.019	2000	5	92.690
	9	10k-10u	------	10	100	No	12-01-10	16:12:43	4.421	7.768	2721.214	0.025	6.507	0.018	275.150	2000	5	65.262
	10	10k-10u	------	10	100	No	12-01-10	16:13:48	4.364	7.761	5434.796	0.091	5.477	0.006	549.970	2000	5	52.437

Header :

Version PPC :	Version of the SCIP program on the PDA
Version SCIP :	Version of the SCIP tester software
SN :	Serial number of the SCIP tester

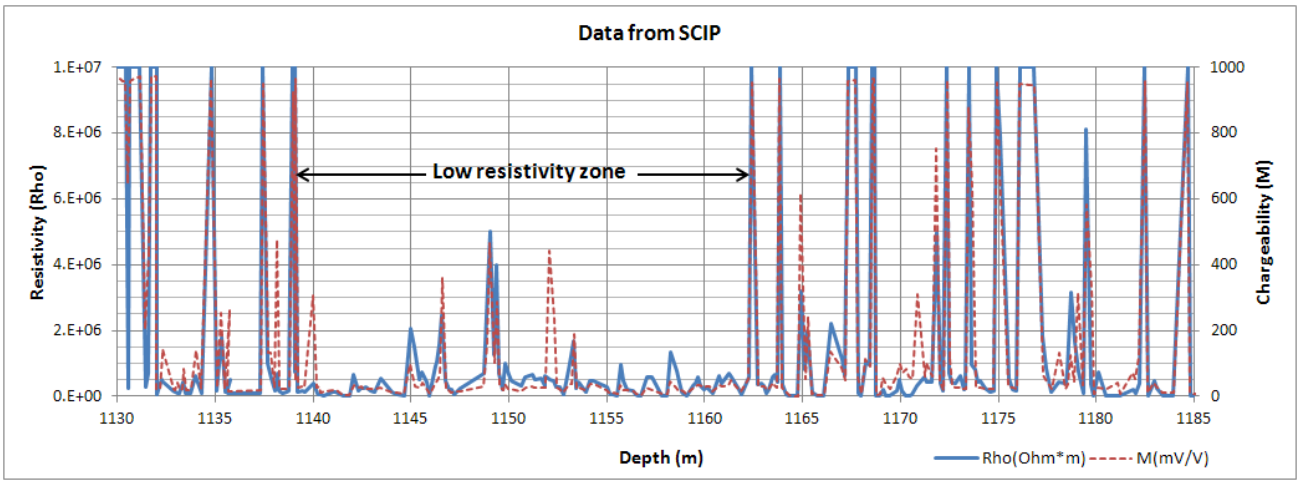
Project :	Name of your project

Windows :	Number of windows (depending on the selected mode)
Settings :	Selected mode (Section 8)
Delay :	Delay in ms before the first window (depending on the selected mode)
Timing :	Timing of each window (depending on the selected mode)

Readings:

Mem:	Memory number
Core ID:	Sample name or number
S(mm^2):	Cross-sectional area of the none core sample in mm^2
D(mm):	Diameter of the core sample in mm
l(mm):	Length of the sample in mm
Half :	Half or full core sample
Contact(kOhm):	Sample resistance in kOhm
Rho(Ohm*m):	Resistivity of the sample in Ohm*m
Vp(mV):	Voltage at the edges of the sample (must be under 13V)
Err Vp:	Error in % of the Vp
M:	Chargeability of the sample in mV/V
Err M:	Error in % of M
I(uA):	Current sent by SCIP in uA
Time:	Transmitter timing in ms
Stack:	Number of stack
M01 – M20:	Windows of chargeability

Annex 2 – Example of a resistivity/chargeability profile using SCIP Tester data



We can note that when the resistivity increases the chargeability increases also. In certain conditions it is useful to calculate a normalized chargeability. This normalization is the metal factor, MF. The MF parameter is the ratio between the chargeability and the resistivity. For a high chargeability with a low resistivity the ratio increases allowing a better discrimination to define metallic mineralization (graphite). However, metallic minerals (sulfides) are often disseminated with a high chargeability corresponding to a high apparent resistivity, in which case the MF parameter is less useful. The metal factor generally used is MF = M *1000 / Rho.