

IP RECEIVER

GRx 8-32

User's Guide



Canadian Manufacturer of
Geophysical Instruments Since 1976

INSTRUMENTATION GDD INC.

860, boul. de la Chaudière, Québec (Québec) Canada G1X 4B7

Tel. : +1 (418) 877-4249 Fax : +1 (418) 877-4054

WWW.GDDINSTRUMENTATION.COM

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1 Introduction

The GDD IP Receiver is a new compact, low consumption unit designed for resistivity measurements. It features high capabilities allowing it to work on any field conditions. It can be configured in multi-pole or multi-dipole reception.

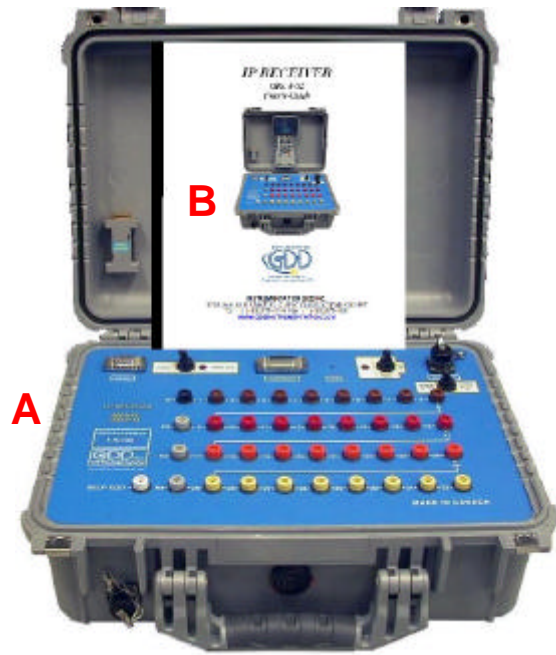
The receiver uses a PDA handheld PC to process data acquisition. A VGA display allows to monitor the results live on the field. The operating system is Windows Mobile® 6.1 Classic and the software can easily be updated via internet.

Characteristics:

- **Reception poles/dipoles:** 8 poles/dipoles, expandable to 32, for dipole-dipole, pole-dipole or pole-pole arrays.
- **Programmable windows:** The GRx8 -32 offers twenty fully programmable windows for a higher flexibility in the definition of the IP decay curve.
- **User modes available:** Arithmetic, logarithmic, semi - logarithmic, Cole-Cole, IPR-12 and user define.
- **IP display:** Chargeability values, Resistivity and IP decay curves can be displayed in real time thanks to the VGA screen. Before data acquisition, the GRx8 -32 can be used as a one channel graphic display for monitoring the noise level and checking the primary voltage waveform through a continuous display process.
- **Internal memory:** Capacity to store up to 64 000 readings for 8 poles/dipoles, memory expandable up to 512 000 readings upon PDA model. Each reading includes the full set of parameters characterizing measurements. Data is stored on flash type memory that does not require any lithium battery for safeguard.

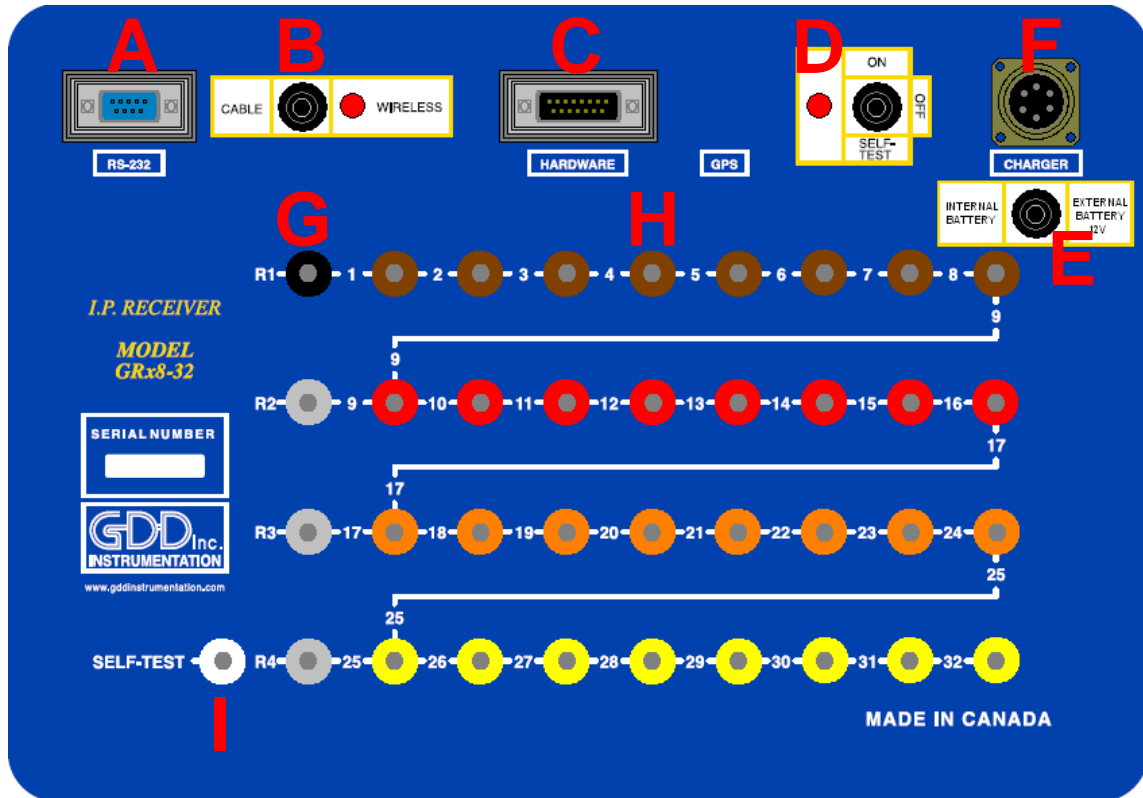
2 GRx8-32 accessories

A	1x	GRx8-32 IP receiver module
B	1x	Instruction manual
C	1x	GRx8-32 IP receiver wall charger
D		Red cables banana/alligator
E		Black cables banana/alligator
F	1x	Allegro Mx field computer
G	1x	Allegro Mx wall charger
H	1x	Allegro Mx CE serial communication cable 9 pos. D -SUB female - 9 pos. D-SUB female
I	2x	Allegro Mx CE serial communication cable 9 pos. D -SUB female - 6 pos. Amphenol male
J	1x	Allegro Mx pen-style stylus
K	1x	Allegro Mx shoulder strap
L	1x	Allegro Mx hand strap
M	2x	Allegro Mx NIMH battery pack 3800mAh 3.6V
N	1x	Allegro Mx external NIMH 3800mAh 3.6V battery charger with a car power supply and a wall power supply
O	1x	Allegro Mx utility CD
P	1x	Allegro Mx AA alkaline battery holder
Q	1x	Charger with 4 AA 1.2V NIMH batteries
R	1x	Allegro Mx USB power dock
S	1x	Allegro Mx USB cable for USB power dock
T	1x	Allegro Mx USB cable
U	1x	GRx 8-32 external battery pack
V	1x	Holster case for Allegro Mx
W	1x	International adapters



3 GRx8-32 components

The GRx8-32 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 Allegro Mx and the GRx8-32.

B - CABLE/WIRELESS switch

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

C - HARDWARE connector - 15 pin programming port

This connector is used to update the CPU and PLD software.

D - ON/OFF/SELF-TEST switch

This switch is used to turn the GRx8 -32 ON or to perform a self - test. The red light indicates ON or SELF-TEST position.

E - INTERNAL/EXTERNAL BATTERY switch

This switch is used to select the use of internal batteries or the external battery pack provided by GDD.

F - CHARGER connector

INTERNAL BATTERY : this connector is used to charge the battery of the receiver with the wall charger.

EXTERNAL BATTERY : this connector is used to connect the external battery pack.

G - REF terminal

This terminal is the infinite electrode in pole configuration. In dipole configuration, this terminal is the first electrode in differential with the second electrode.

H - NUMBERED terminals

These terminals are referenced to the Ref terminal (infinity in pole configuration). In dipole configuration, the numbered terminals are differential terminals.

I - SELF-TEST terminal

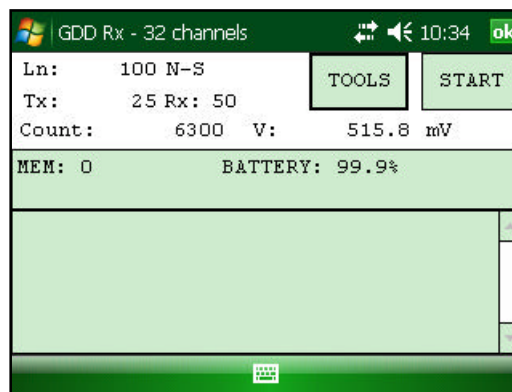
This terminal is used to perform a self test.

4 Power

GDD's GRx8-32 receiver is powered by rechargeable Nickel - Cadmium batteries. Here are a few tips for using and storing the receiver.

Usage

- Using a different battery charger than the one supplied by GDD could damage the batteries and the receiver.
- The charger LED is red when the batteries are charging. It turns to green once the batteries are fully powered up.
- Make sure that the batteries are fully charged before using the receiver.
- The connector labelled CHARGER is used only to recharge the internal batteries or to use the External Battery Pack supplied by GDD. Connecting other external batteries using this connector could damage the batteries and the receiver.
- Do not replace the receiver internal batteries without the authorization and advice from GDD's technicians.
- The total operating time of the receiver will depend on the environmental conditions. Using the receiver in very cold weather (-20°C to -40°C) will lower the operating time.
- The power level of the batteries is indicated on the main screen of the Allegro Mx when using the GDD Rx program.



- It is recommended to recharge the batteries once their power level is below 20%.
- The receiver will turn itself off when the batteries reach a critical level. It is set between 0% and 10%.

Storage

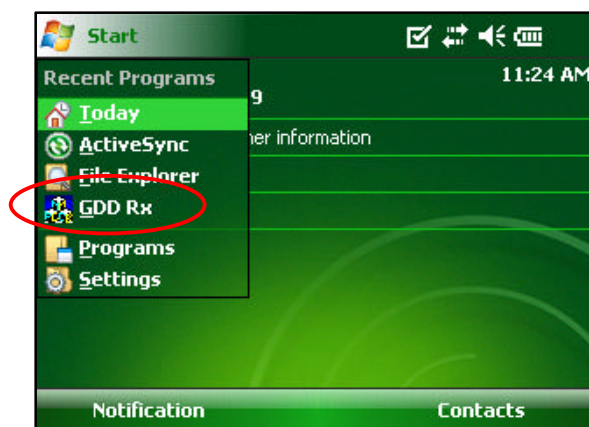
- When storing the receiver for a few days or more, make sure that the batteries are fully charged.
- Store the receiver in a cool and dry place.
- Place the “Internal battery / External battery” switch on “External battery” position to avoid the self -discharge of the batteries.
- If stored for several months, recharge the batteries every 3 months.
- If the batteries haven’t been recharged for a long time (over 3 months), it is possible that several attempts of charging and discharging (up to 3) are required before batteries can recover their full capacity.

5 Quick start guide

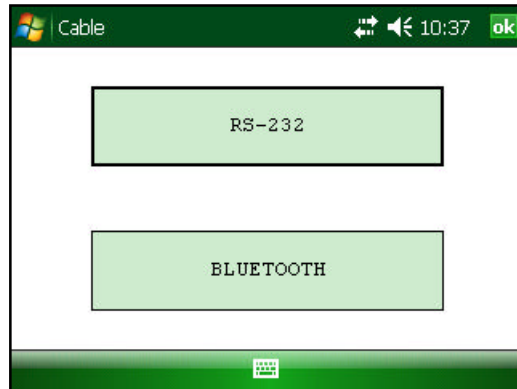
1. Connect electrodes into terminals.
2. Turn ON the IP receiver using the ON/OFF switch on the GRx8 - 32 panel.
3. Select the communication mode using the CABLE/WIRELESS switch on the GRx8-32 panel. **In CABLE mode, the red light will turn ON only when the GRx8-32 software is active.**
4. Connect the RS-232 cable between the Allegro Mx (COM1) and the GRx8-32 RS-232 connector (CABLE communication only).
5. Turn ON the Allegro Mx with the ON/OFF key.



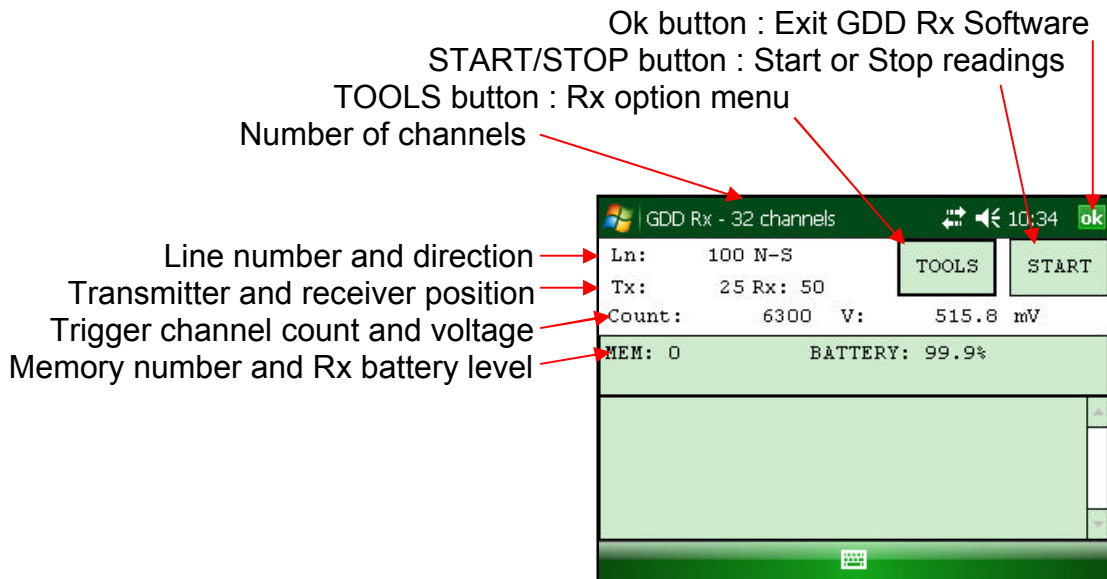
6. Click on Start and select GDD RX.



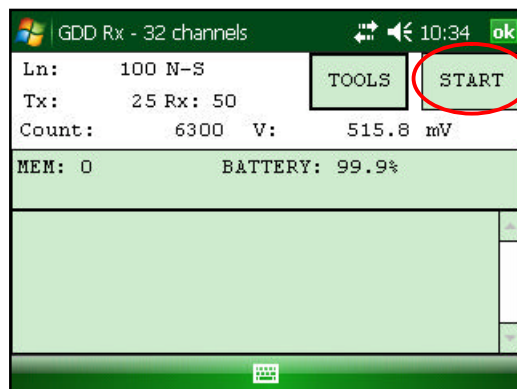
7. Select the communication mode: *RS-232 (CABLE)* or *BLUETOOTH (WIRELESS)*.



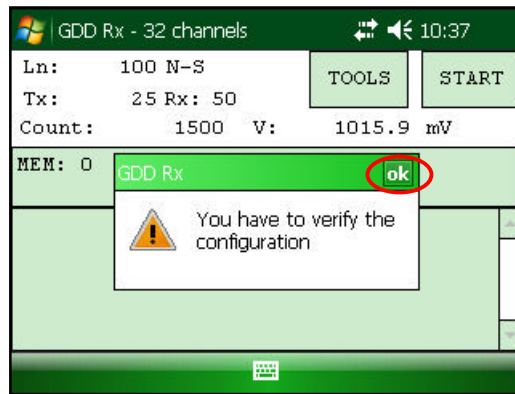
8. The following screen appears.



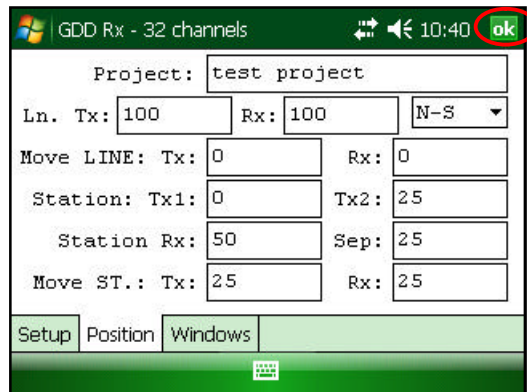
9. Click **START** to begin the acquisition procedure.



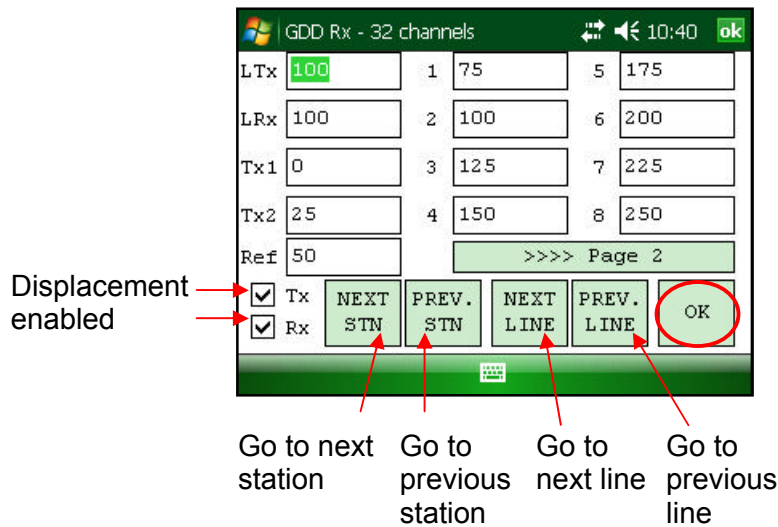
10. The following screen appears. Click OK to continue.



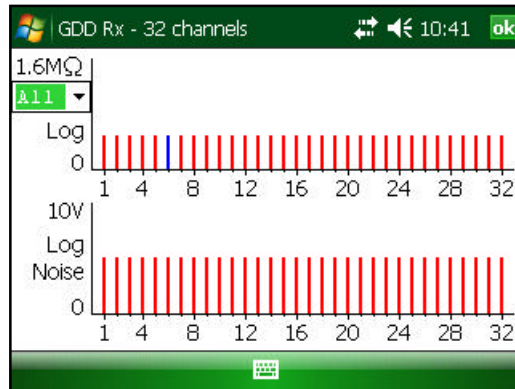
11. Enter the project, line, station, move displacement, etc. for Tx and Rx. Click OK to continue.



12. Verify if the positions are correct and click OK to continue.

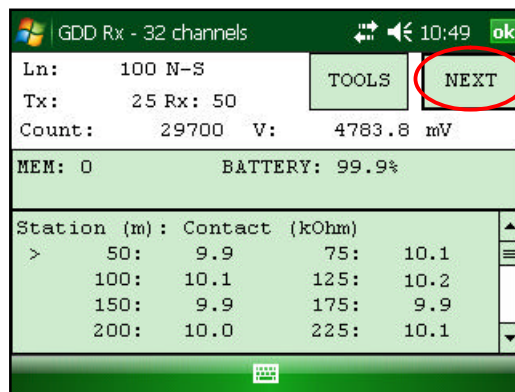


13. The Contact and Noise graph appears. If the values displayed are normal, click X to close the window.

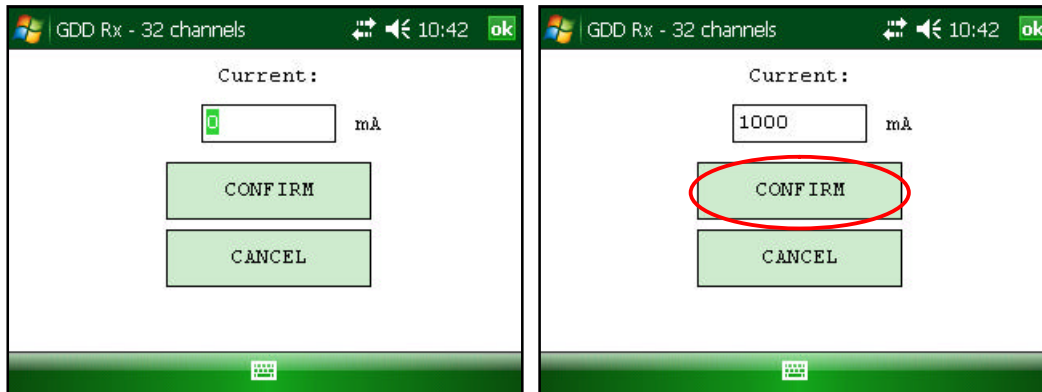


14. Click NEXT to continue.

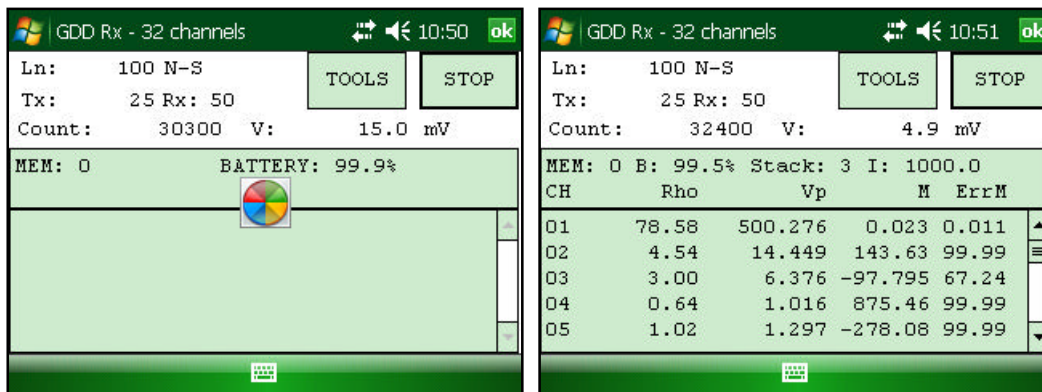
*Note: If all stations show an INFINITE contact, the reference electrode might be disconnected.



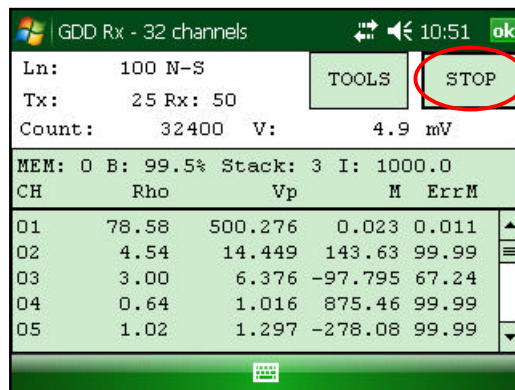
15. Enter the transmitter current and click **CONFIRM** to start the readings.



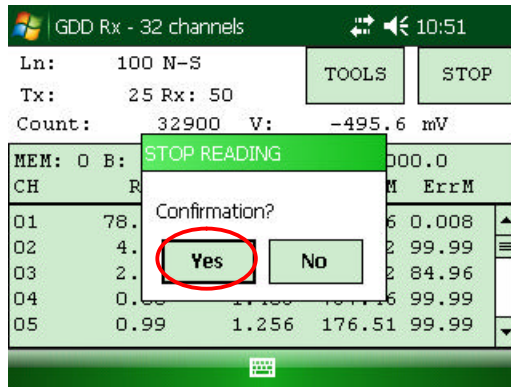
16. The following screens appear.



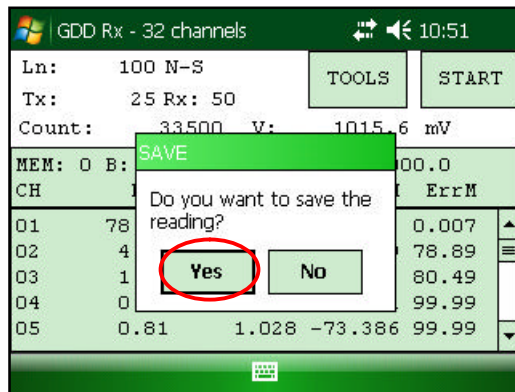
17. Click **STOP** or wait until the end of the acquisition to stop the readings and save the data.



18. Click YES to confirm the operation.

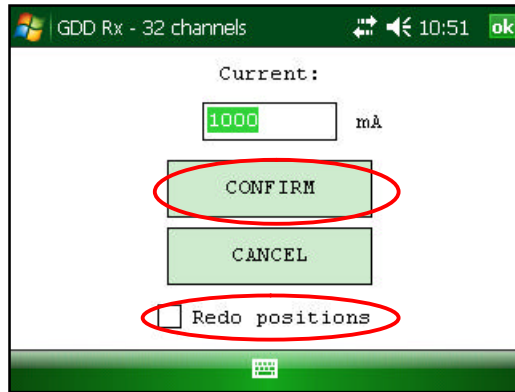


19. Click YES to save readings into the memory.



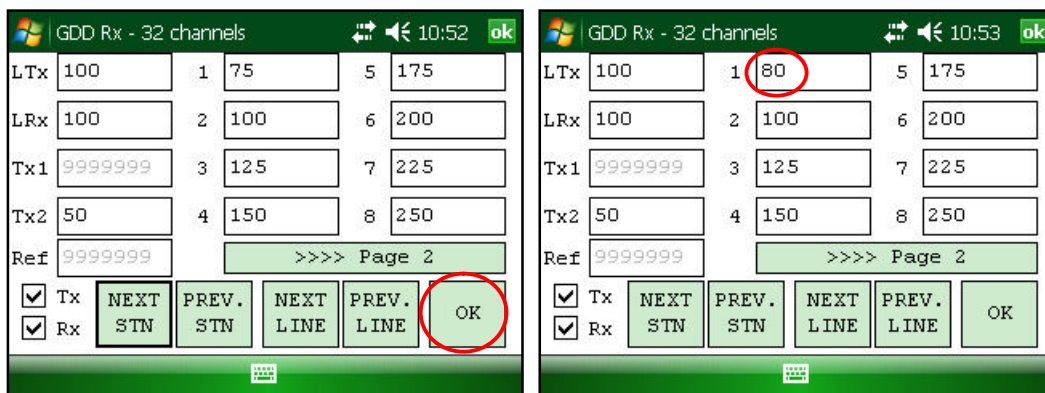
20. Check the REDO POSITIONS option to change the transmitter or receiver position.

Change the current value if it has changed and click CONFIRM to save the current value.



- 20.1. If the REDO POSITIONS option is checked, enter the transmitter and receiver position and click OK.

*Each position can be changed individually or moved by clicking Next or Prev.



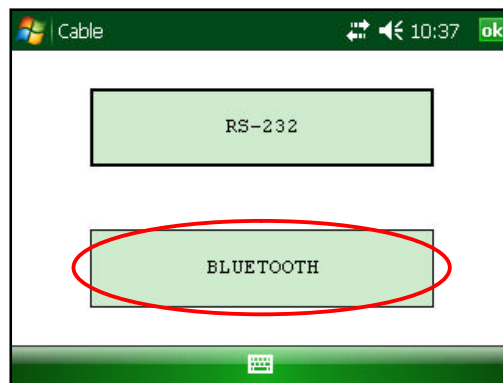
21. Repeat steps 9 through 19 to take another set of readings.

6 RS232/Bluetooth communication

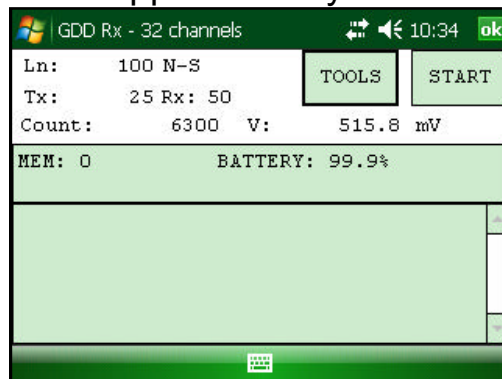
1. Select the “RS -32” communication mode to use the GRx8 -32 with a serial communication cable.



2. Select the “BLUETOOTH” communication mode to use the GRx8-32 with a wireless connection.



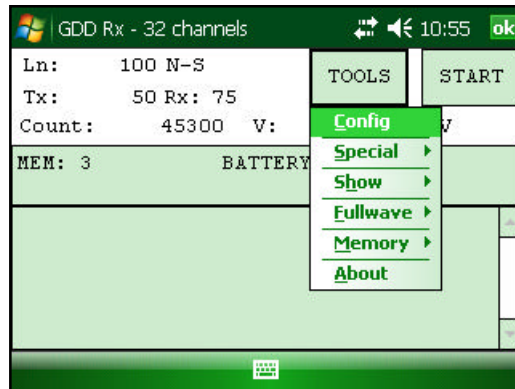
3. The following screen appears and you are ready to begin.



In Bluetooth mode, if a “COM Error” message appears, see *Section 12 – Troubleshooting*.

7 Tools menu

Click TOOLS to select one of the following options:



Config

Use the CONFIG option to change:

- Staking parameters
- Electrode array
- Active channel
- Trigger channel
- Line number and position
- Transmitter and receiver position
- Signal timing
- Mode

Special

Use the SPECIAL option to:

- Re-init the GRx8-32
- Test the GRx8-32 with the internal simulator

Hotkeys

Use the HOTKEYS option to display the shortcut keys menu

Show

Use the SHOW option to display:

- Signal graph
- Contact and Noise monitor graph
- Vp and Cycle synchronization graph
- Decay curve
- Windows chargeability
- SP (self potential)

Memory

Use the MEMORY option to:

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

About

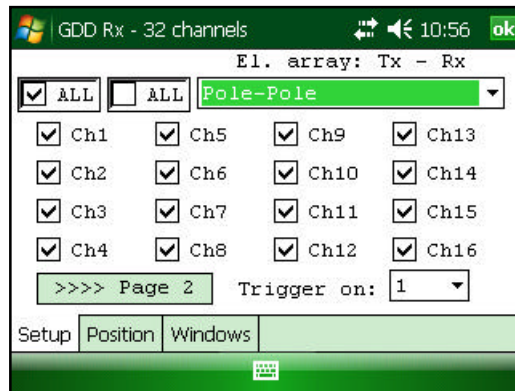
Use the ABOUT option to display GDD Rx software version number

7.1 Config option

7.1.1 Setup

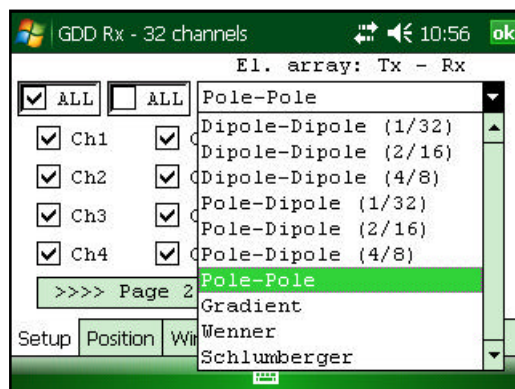
The SETUP option is used to set the electrode arrays, the active channel(s) and the trigger channel.

Select Tools | Config | Setup, the following window appears.

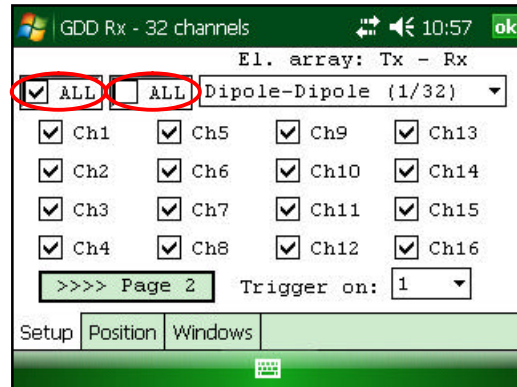


1. Select the electrode arrays configuration.

- Dipole-Dipole (1/32)
- Dipole-Dipole (2/16)
- Dipole-Dipole (4/8)
- Pole-Dipole (1/32)
- Pole-Dipole (2/16)
- Pole-Dipole (4/8)
- Pole-Pole
- Gradient
- Wenner
- Schlumberger

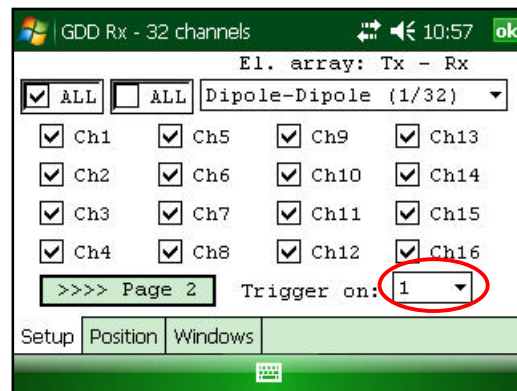


2. Check the active channel(s). Tap on the ALL checkbox to select all channels or tap on the ALL checkbox to unselect all channels.



For a 32 channels receiver, the channels 17-32 are shown on the second page. Click on Page 2 button to see them.

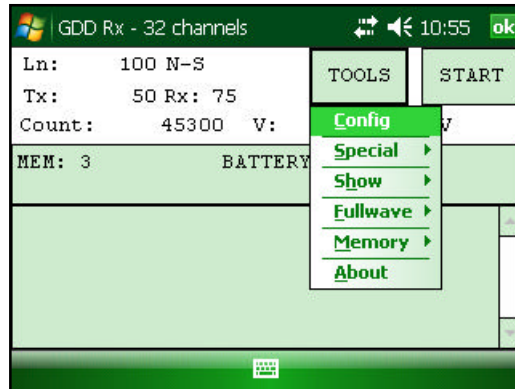
3. Select the trigger channel, this channel is used for the synchronization process.



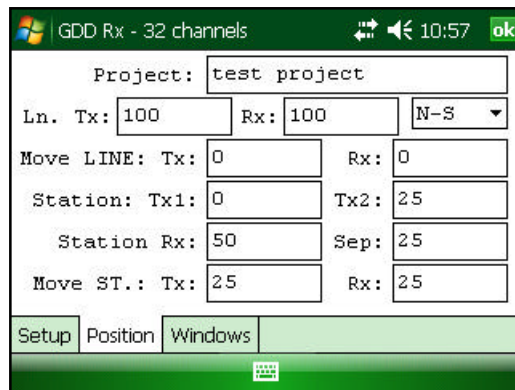
7.1.2 Position

The POSITION tab is used to set these parameters : the Tx line number, the Rx line number, the line direction, the transmitter position (Tx1 and Tx2), the receiver position, the separation, the transmitter movement offset and receiver movement offset.

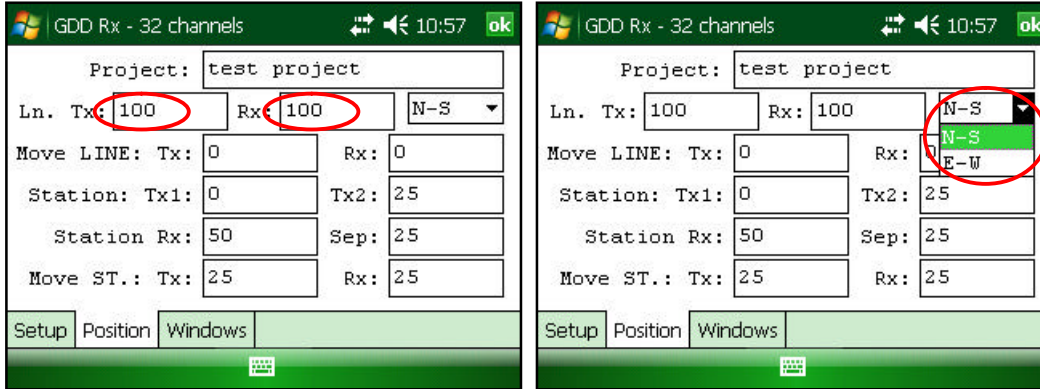
1. Select Tools | Config | Position



2. The following screen appears.

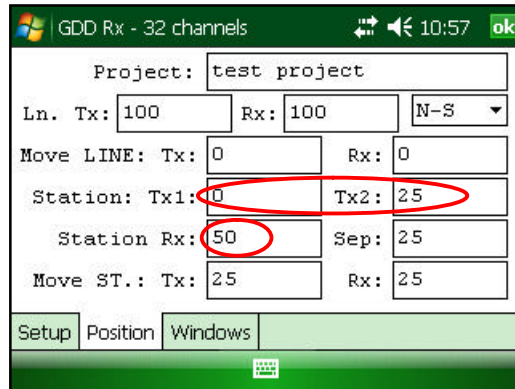


3. Enter line number and select line direction.



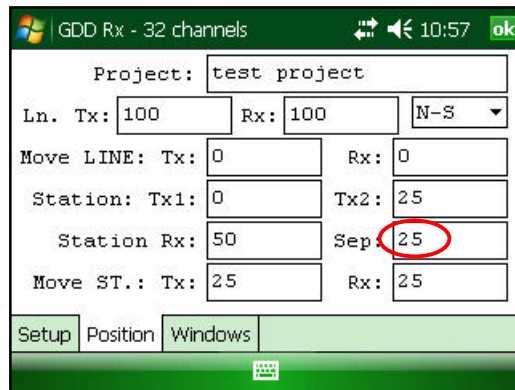
A negative number cannot be enter for line; the labels N, S, E and W are used to define direction.

4. Enter the transmitter and receiver first electrode position.



A negative number is used to define South and West direction.

5. Enter the separation between electrodes of the receiver.



A negative number is used to define South and West direction.

6. Enter the transmitter and receiver electrodes moving distance.

The screenshot shows the 'GDD Rx - 32 channels' software interface. The window title bar includes a Windows logo, the text 'GDD Rx - 32 channels', and icons for help, back, and a green 'ok' button. The time '10:57' is also displayed. The main area contains several input fields and a dropdown menu:

- Project: test project
- Ln. Tx: 100 Rx: 100 N-S (dropdown)
- Move LINE: Tx: 0 Rx: 0 (both 0s are circled in red)
- Station: Tx1: 0 Tx2: 25
- Station Rx: 50 Sep: 25
- Move ST.: Tx: 25 Rx: 25 (both 25s are circled in red)

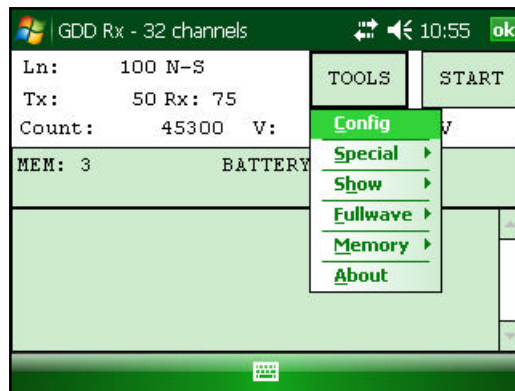
At the bottom, there are buttons for 'Setup', 'Position', and 'Windows', and a small icon in the bottom right corner.

A negative number is used to define South or West direction.

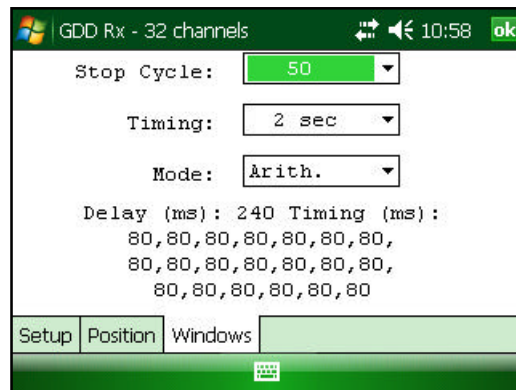
7.1.3 Windows

The WINDOWS option is used to set the signal timing and the mode.

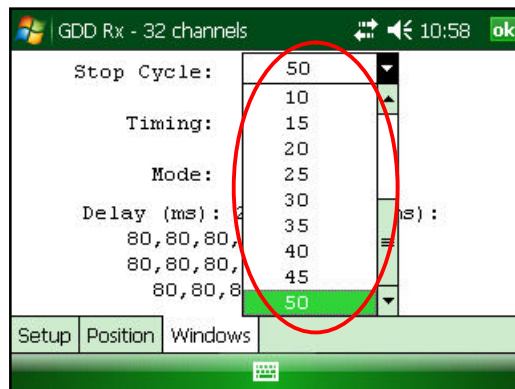
1. Select Tools | Config | Windows



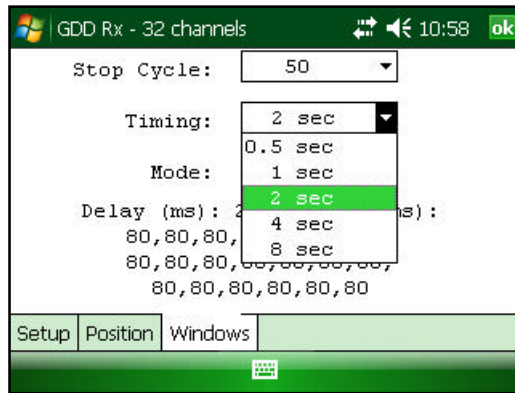
2. The following screen appears.



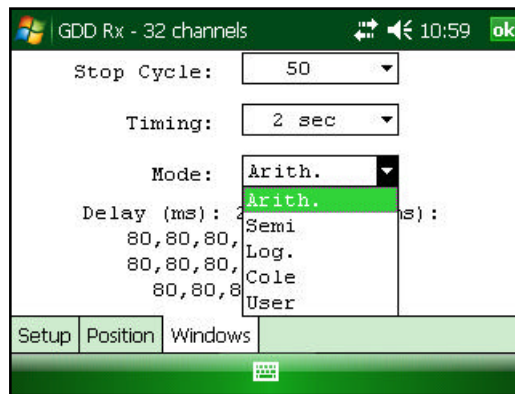
3. Select the maximum number of stacks.



4. Select the signal timing.



5. Select the mode (windows time definition).



- 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

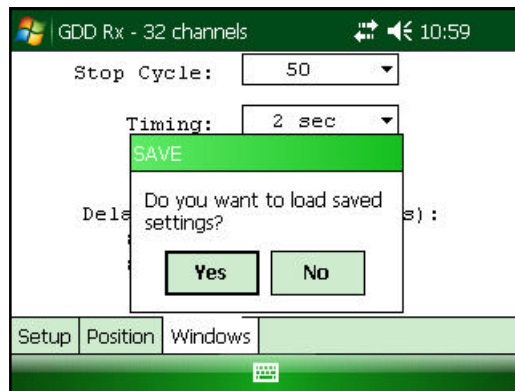
- Cole

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

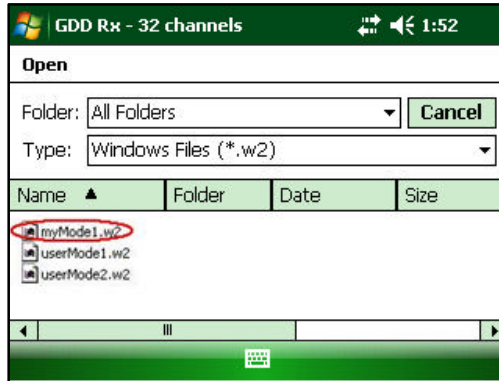
- User defined

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

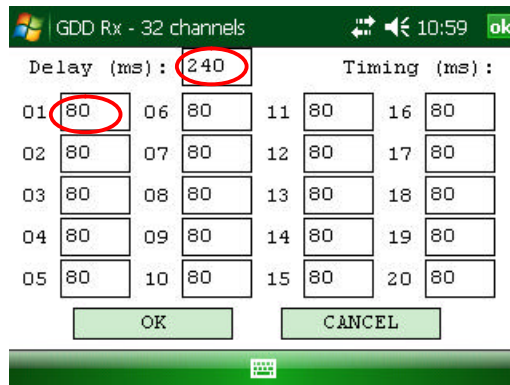
In the USER mode, you can load settings you have saved before, or you can create new settings.



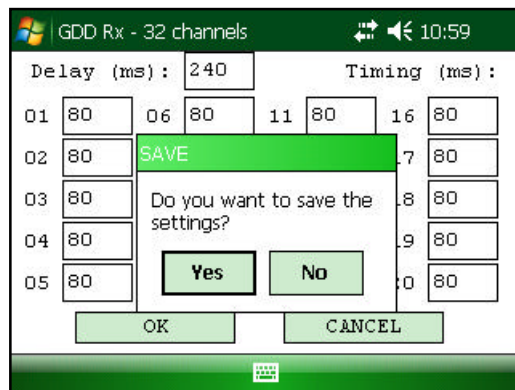
Click YES to load your settings from a previously saved file. This window will appear.

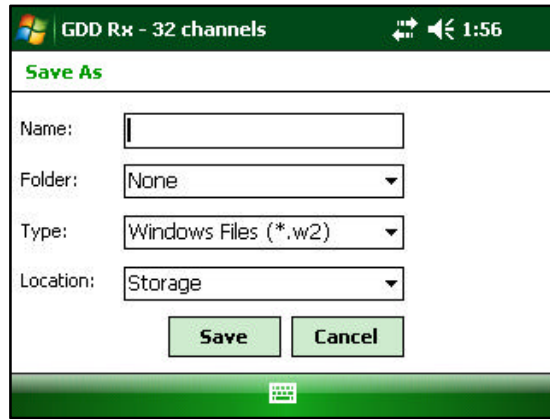


In this dialog box, select your file and click OK. The saved values will be loaded in the User defined mode. Click NO to manually enter the delay and window(s) width.



Click YES to save your new settings.

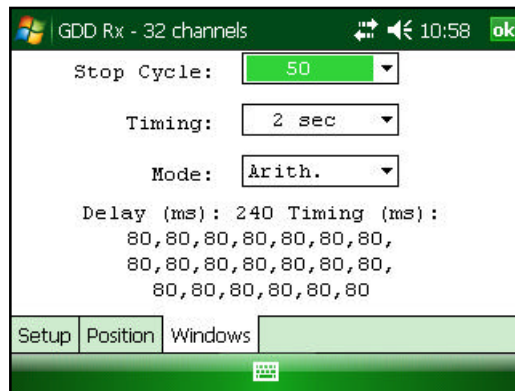




Enter your filename and the location where you want to save your file. The User defined settings will be saved so you can reload them in the Allegro Pocket PC later.

Click NO if you do not want to save your User defined settings in a file.

In all cases, you will be brought back to this display and the settings you have entered in the User defined window will be loaded into the Allegro Pocket PC.

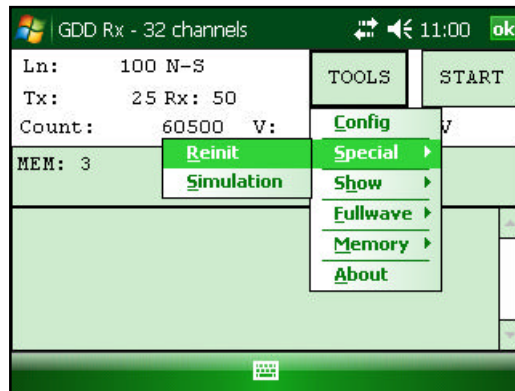


7.2 Special option

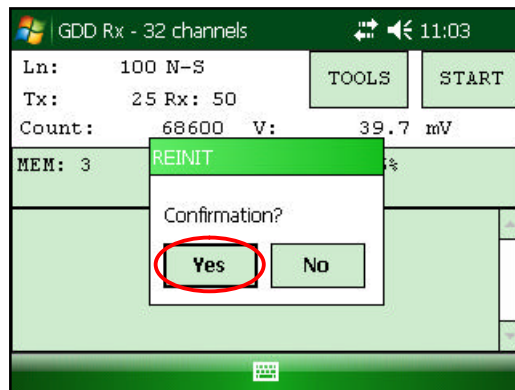
7.2.1 Reinit

The REINIT option is used to reset GRx8 -32 configurations and communication with the Allegro Mx.

1. Select Tools | Special | Reinit



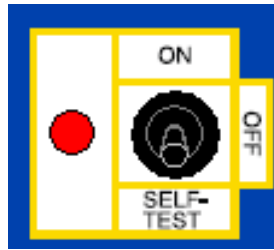
2. Click YES to reinitialize the GRx8-32.



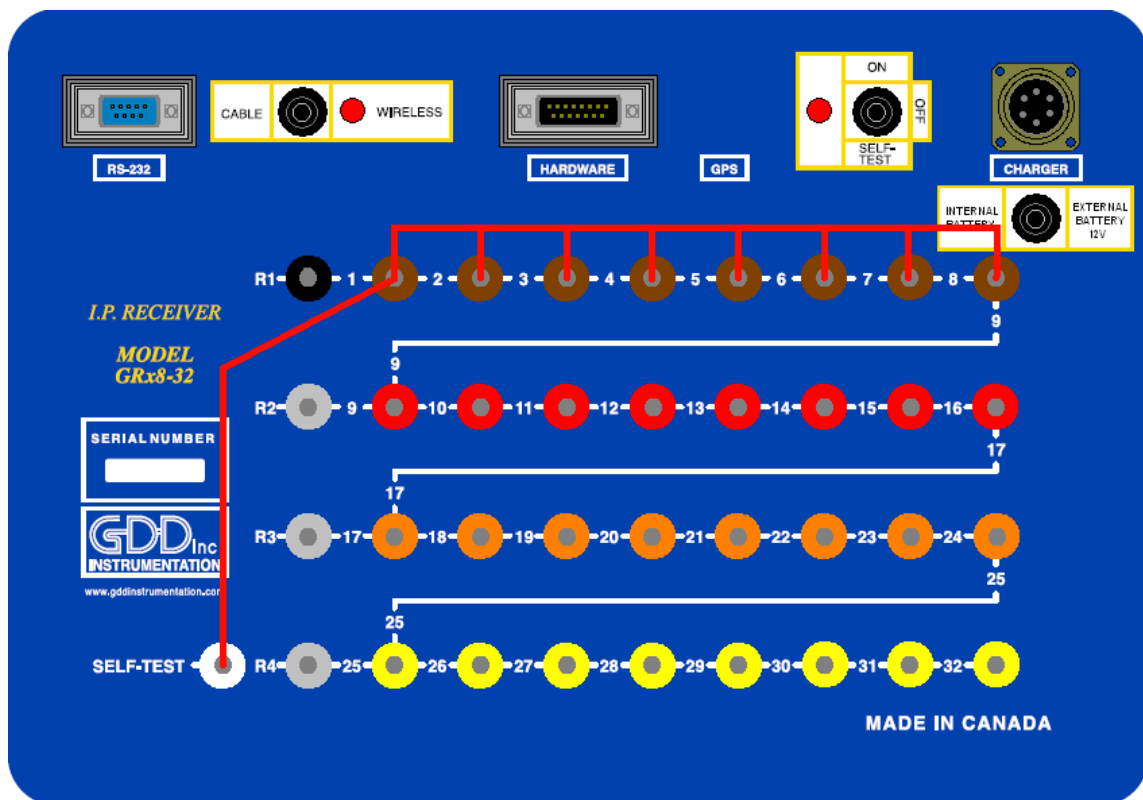
7.2.2 Simulation

The SIMULATION option is used to perform a self test with the internal waveform generator (you need to select the Pole -Pole configuration to use this option).

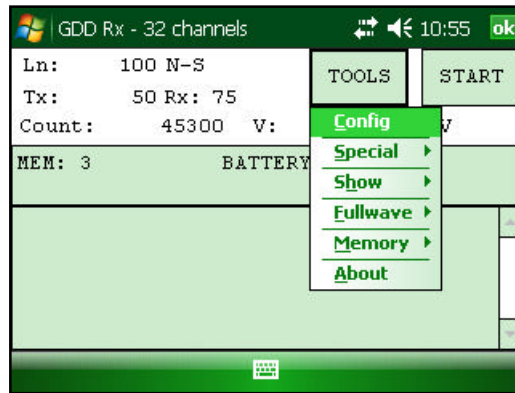
1. Select the SELF -TEST mode with the ON/OFF/SELF -TEST switch.



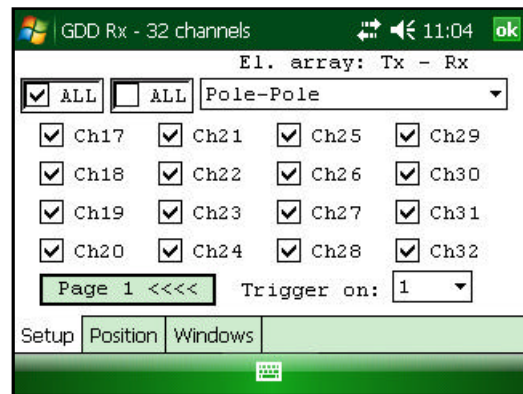
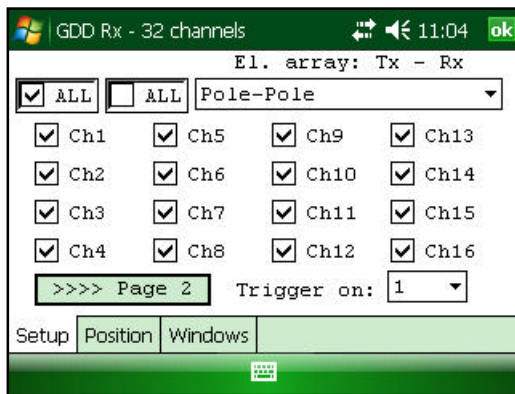
2. Short the SELF -TEST terminal with the channel(s) you want to test. The picture below shows a self -test with the first eight channels.



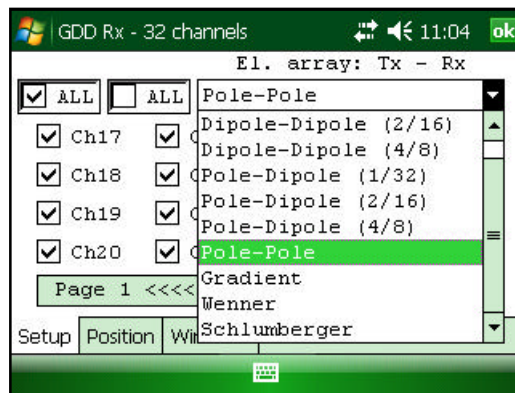
3. Select Tools | Config | Setup



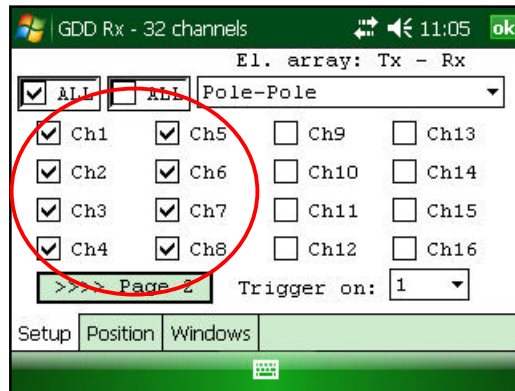
4. The following screens appear.



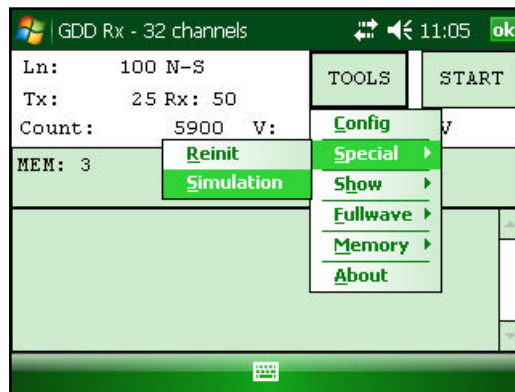
5. Select the Pole-Pole array configuration.



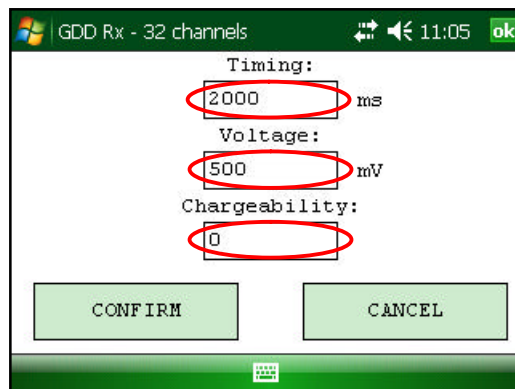
6. Check the channel(s) you want to test.



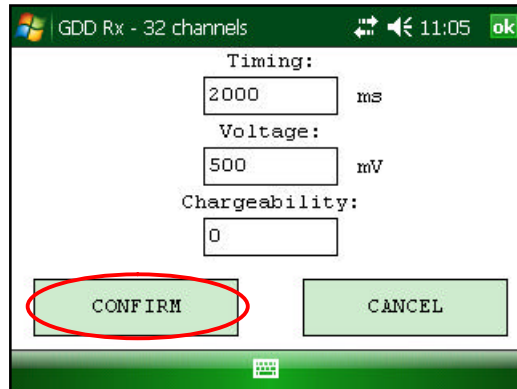
7. Select Tools | Special | Simulation



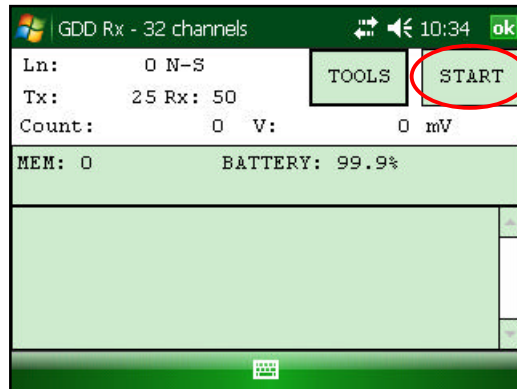
8. Enter the waveform timing (default = 2000ms).
9. Enter the primary voltage (default = 500mV).
10. Enter the chargeability (default = 0).



11. Click CONFIRM.



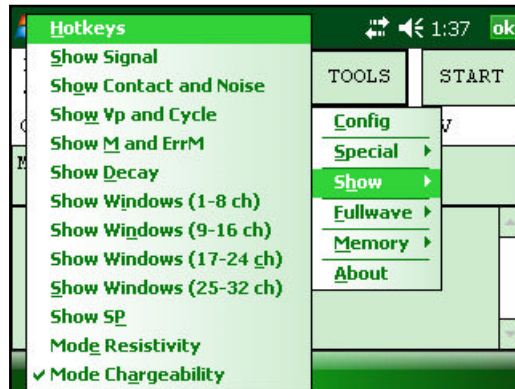
12. Click START to begin the acquisition process.



7.3 Hotkeys

The HOTKEYS option is used to display the shortcut keys menu.

1. Select Tools | Show | Hotkeys



2. The following screen appears.



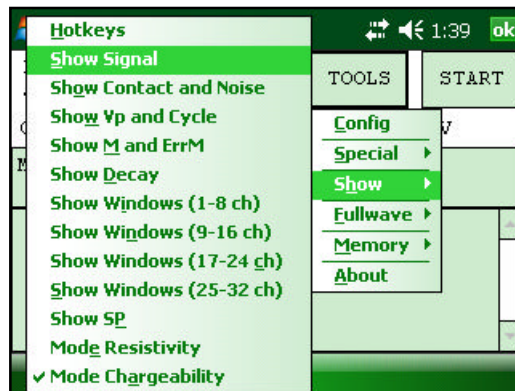
Use the shortcut keys to navigate quickly between the different options.

7.4 Show option

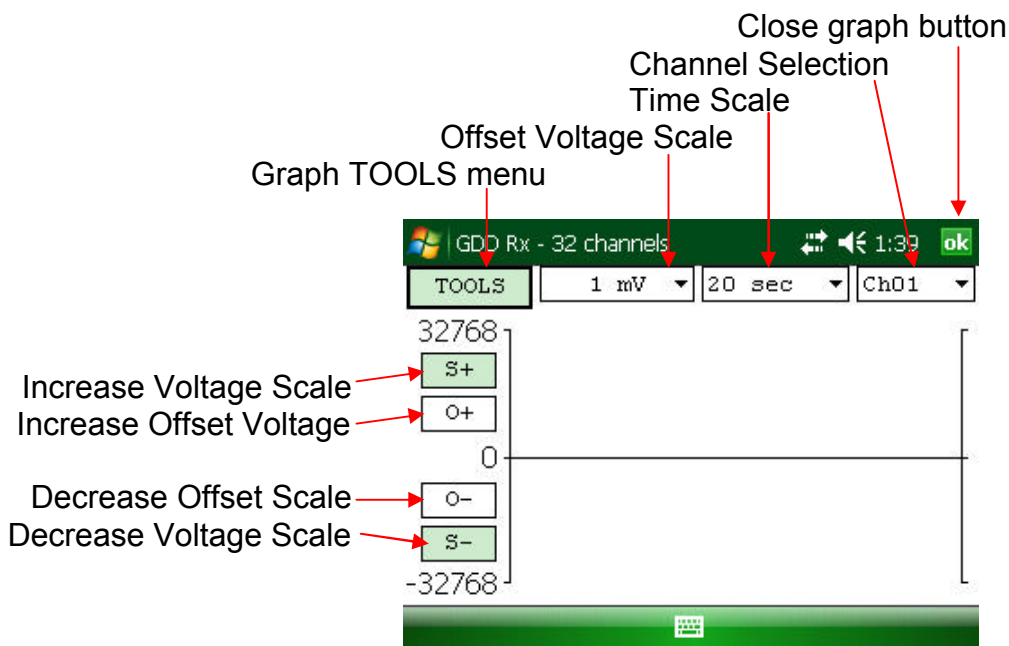
7.4.1 Signal

The SIGNAL option is used to display the signal graph of a selected channel.

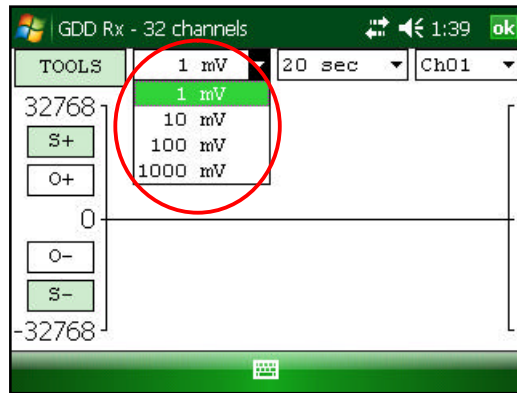
1. Select Tools | Show | Show Signal
Hotkey 'S'



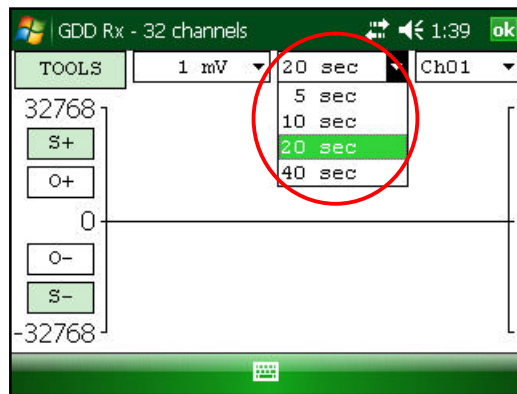
2. The following screen appears.



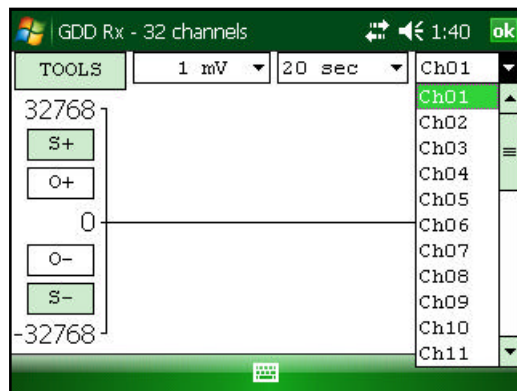
3. Select offset voltage scale.



4. Select time scale.



5. Select display channel

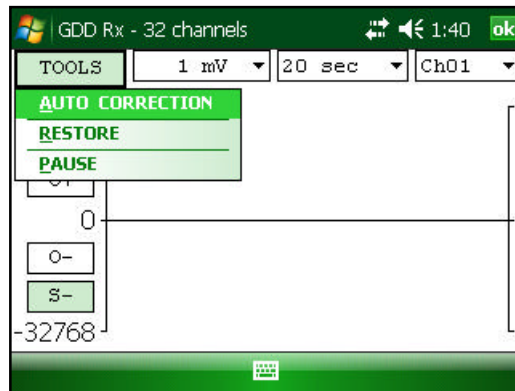


7.4.1.1 Tools menu

7.4.1.1.1 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 sec for a 2 sec time base).

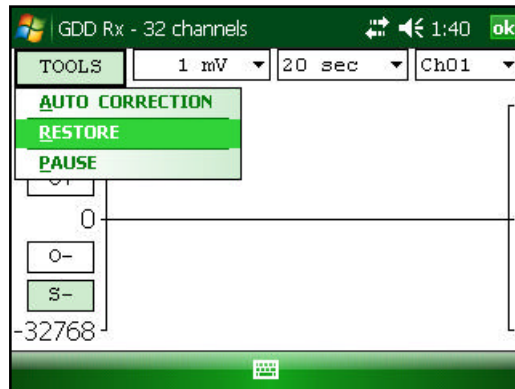
1. Select Tools | Auto Correction



7.4.1.1.2 Restore

The RESTORE option is used to reset the default setting.

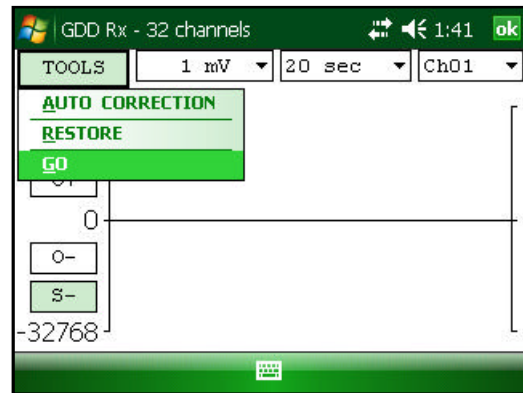
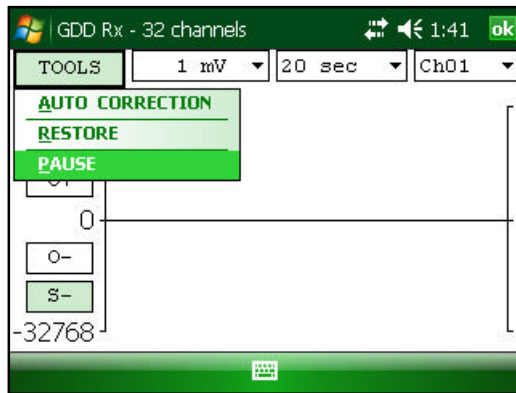
1. Select Tools | Restore



7.4.1.1.3 PAUSE/GO

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

1. Select Tools | Pause or Tools | Go

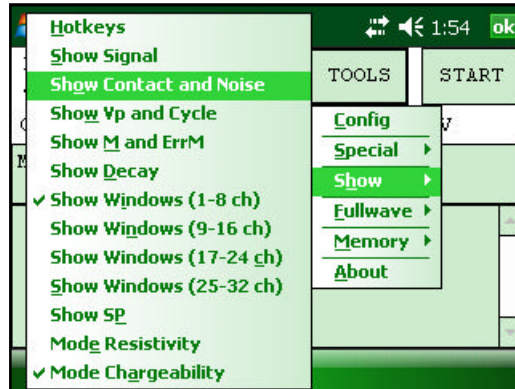


7.4.2 Contact and Noise

The CONTACT AND NOISE option is used to display the noise graph of all channels. This option can be useful for troubleshooting if you have noise problem. The Contact graph shows the contact resistance between your electrodes and the ground.

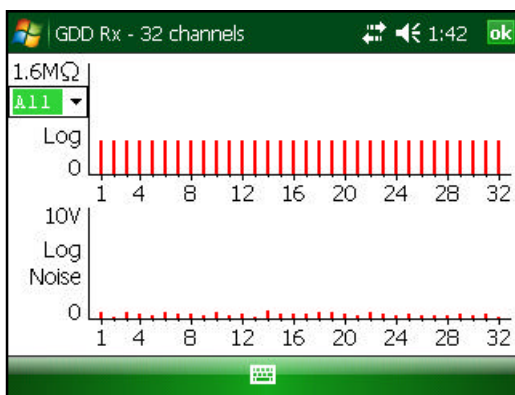
*This option should be used before your transmitter sends current. If the transmitter sends current, the Vp signal will be displayed for each active channel.

1. Select Tools | Show | Show Noise
Hotkey 'N'

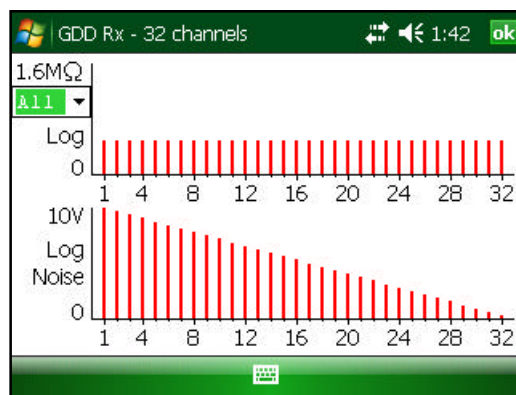


2. The following screen appears.

Transmitter is **not** sending current



Transmitter is sending current

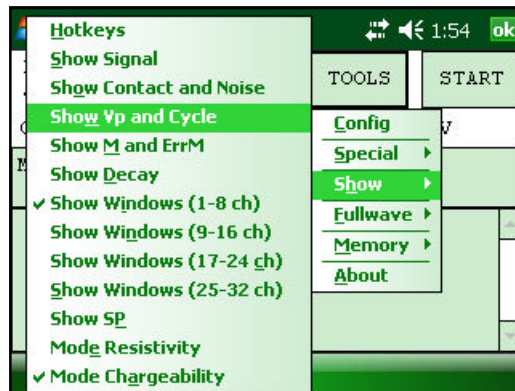


7.4.3 Vp and Cycle

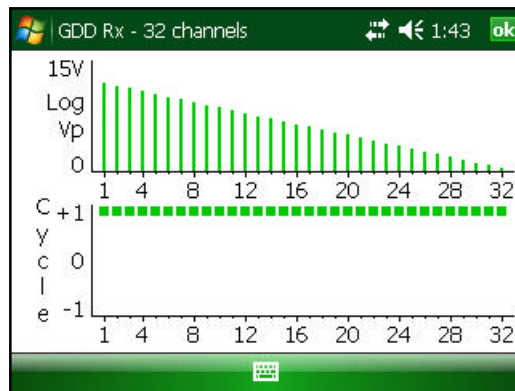
The steps 14 to 16 of the Section 5 of this Manual must be done before using this feature.

The VP AND CYCLE option is used to show the channel synchronization. This option can be useful for troubleshooting if you have connection problem. The VP part of the graph shows the primary voltage of all your electrodes. The current graph is an example; your VP graph will depend on the physical configuration of the electrodes.

1. Select Tools | Show | Show Cycle
Hotkey 'C'



2. The following screen appears.



- Red dots indicate that the GRx8-32 is not synchronized.
- Green dots indicate that the GRx8-32 is synchronized.

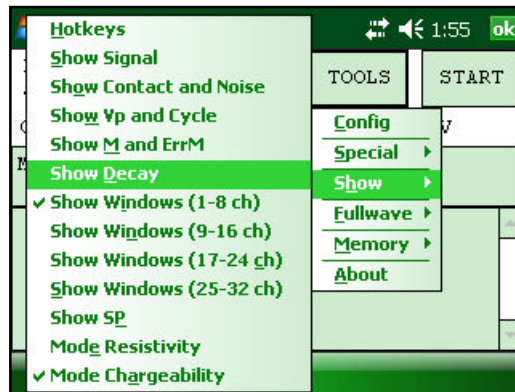
- If the GRx8 -32 is synchronized and the green dots are not moving in the same direction, check the electrodes position on the GRx8-32 front panel.

7.4.4 Decay Curve

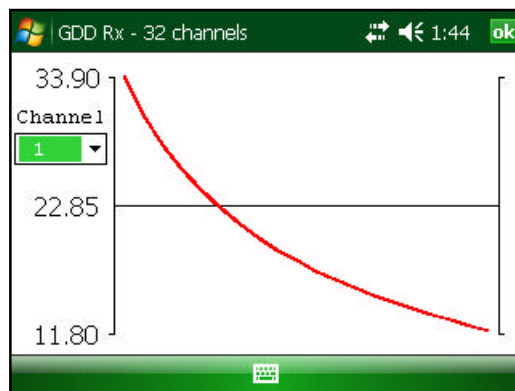
The steps 14 to 16 of the Section 5 of this Manual must be done before using this feature.

The *Decay Curve* option is used to display the decay graph of a selected channel.

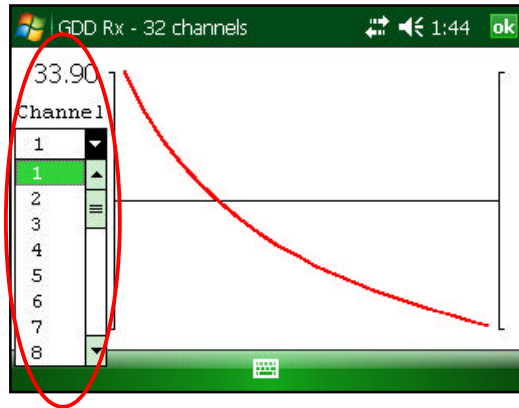
1. Select Tools | Show | Show Decay
Hotkey 'D'



2. The following screen appears.



3. Select the display channel.

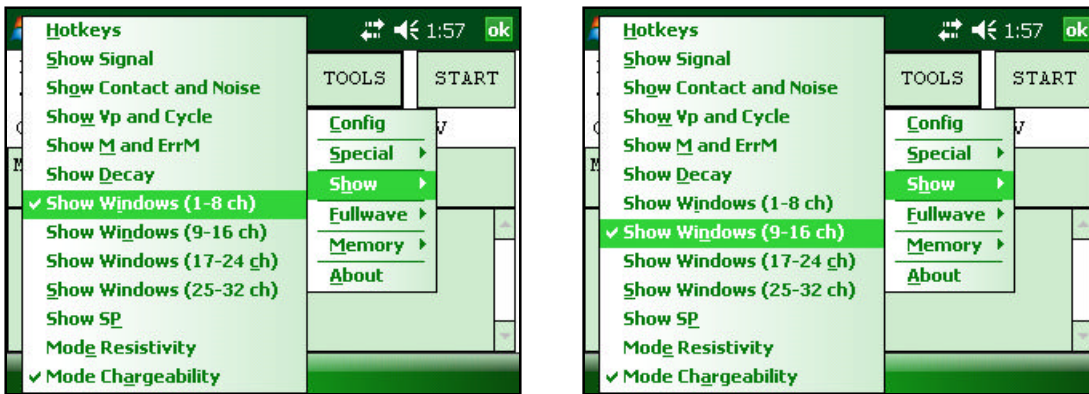


7.4.5 Show Windows (1-8 ch or 9-16 ch)

The steps 14 to 16 of the Section 5 of this Manual must be done before using this feature.

The *Show Windows* option is used to display the windows chargeability of each channel.

1. Select Tools | Show | Show Windows (1 -8 ch), (9-16 ch), (17-24 ch) or (25-32 ch)
Hotkeys '1' (1-8 ch), '2' (9-16 ch), '3' (17-24 ch), '4' (25-32 ch)



2. The following screen appears.

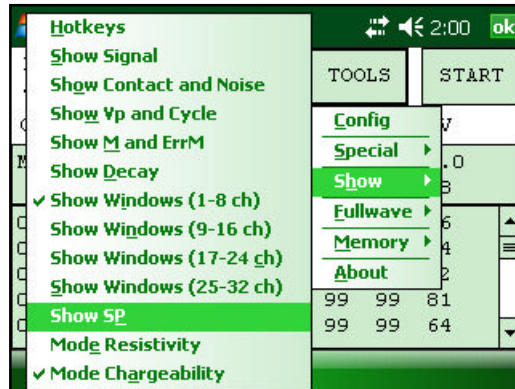
Window number	W	CO1	CO2	CO3	CO4	CO5	CO6	CO7	CO8	Chargeability value
01	-0	90	99	99	99	-99	99	-99		
02	-0	99	99	99	76	-99	99	-99		
03	-0	99	99	99	10	-99	99	-99		
04	0.0	99	99	99	-40	-99	99	-99		
05	-0	99	99	99	-95	-99	77	-99		

7.4.6 Show Sp

The steps 14 to 16 of the Section 5 of this Manual must be done before using this feature.

The SHOW SP option is used to display the self potential (SP) in mV of each channel.

1. Select Tools | Show | Show SP
Hotkey 'P'



2. The following screen appears.

A screenshot of the 'GDD Rx - 32 channels' screen. The screen displays various parameters and a table of channel data. The table has columns for 'CH', 'Sp', 'SpMin', and 'SpMax'. The 'Sp' column represents the self potential value for each channel. Red arrows point from the text 'Channel number' to the 'CH' column and from 'Self potential value' to the 'Sp' column.

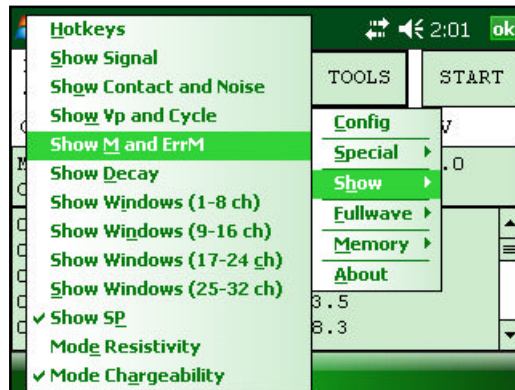
CH	Sp	SpMin	SpMax
01	-537.2	-797.4	-368.0
02	-3264.7	-3808.7	-789.6
03	-5265.3	-6156.5	-1194.9
04	427.8	43.1	553.5
05	-515.3	-612.8	-98.3

7.4.7 Show M and errM

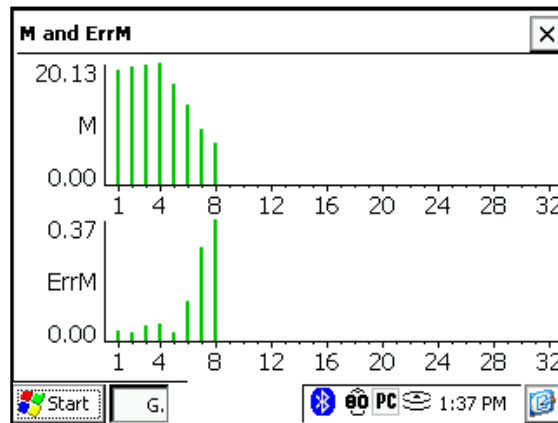
The steps 14 to 16 of the Section 5 of this Manual must be done before using this feature.

The Show M and errM option is used to display the chargeability and the error in chargeability for each channel.

3. Select Tools | Show | M and errM
Hotkey 'R'



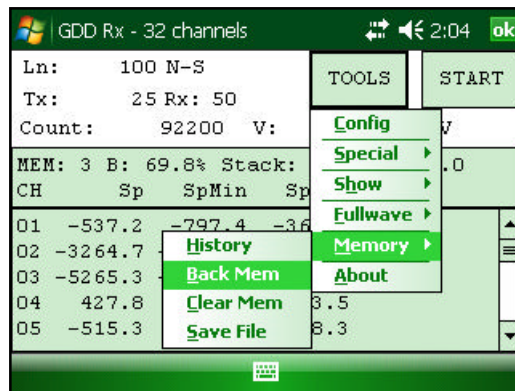
4. The following screen appears.



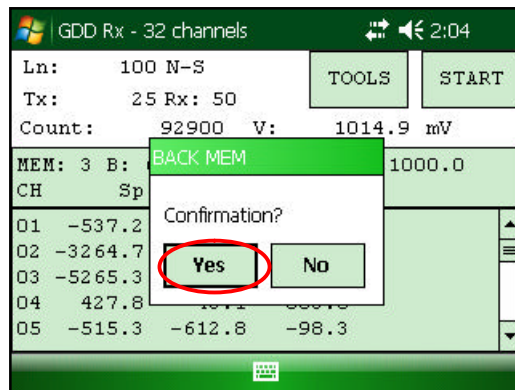
7.5.2 Back Mem

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

1. Select Tools | Memory | Back Mem



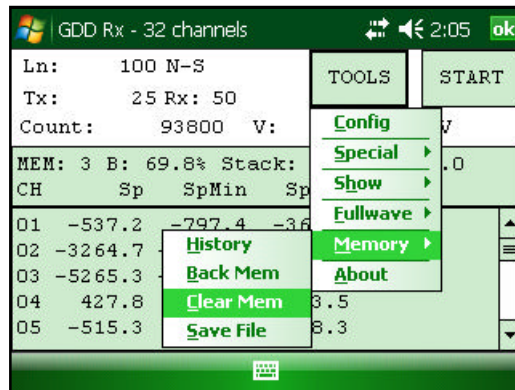
2. Click Yes to clear the last readings.



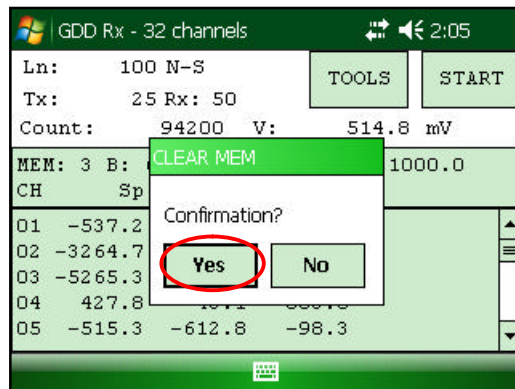
7.5.3 Clear Mem

The *Clear Mem* option is used to clear all the readings of the memory.

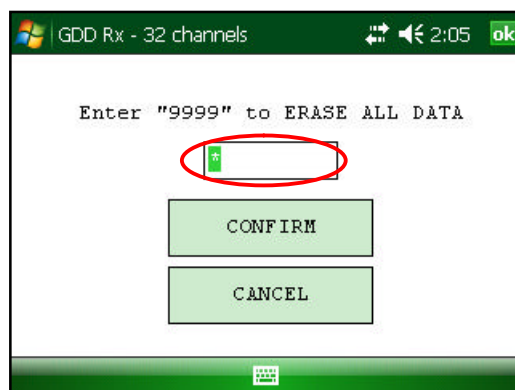
1. Select Tools | Memory | Clear Mem



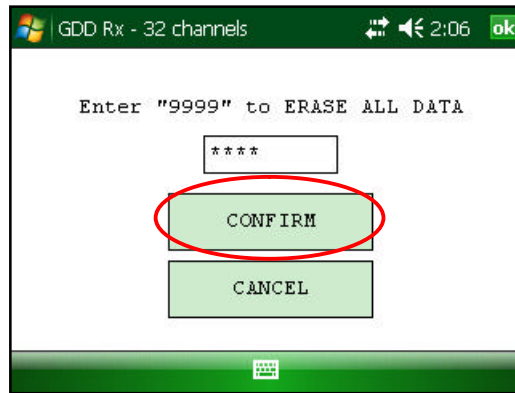
2. Click Yes to confirm the operation.



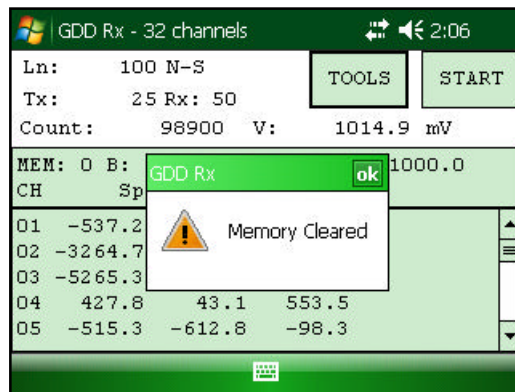
3. Enter 9999 in the text box.



4. Click *Confirm* to clear all the readings of the memory.



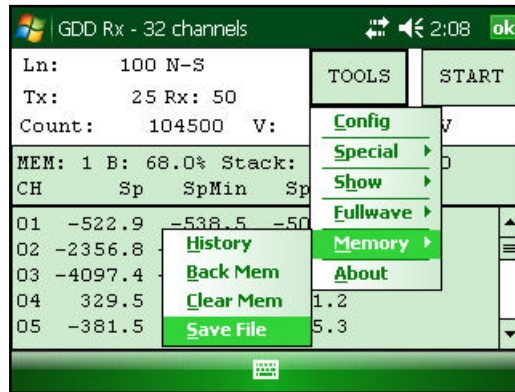
5. A message will follow to confirm your operation.



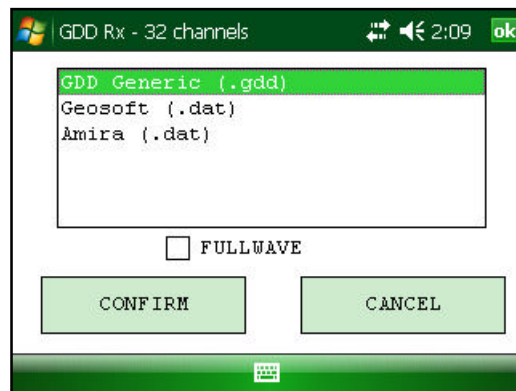
7.5.4 Save File

The *Save File* option is used to save the readings into a file.

1. Select Tools | Memory | Save File

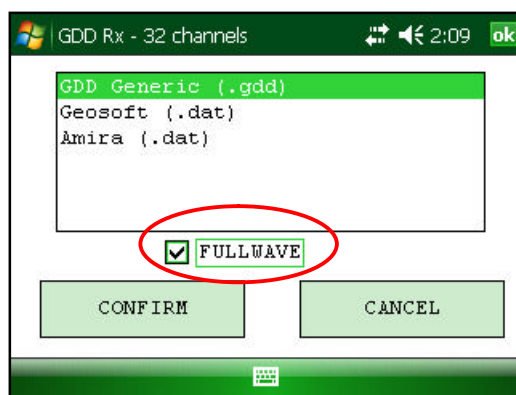


2. Select the output file format.



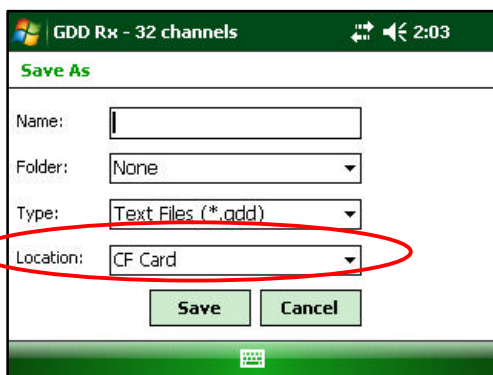
*New output file format can be created depending on the needs of the customer.

3. Check the *FULLWAVE* check box if you want to create the fullwave file.



4. Click CONFIRM.
5. Select the file location.

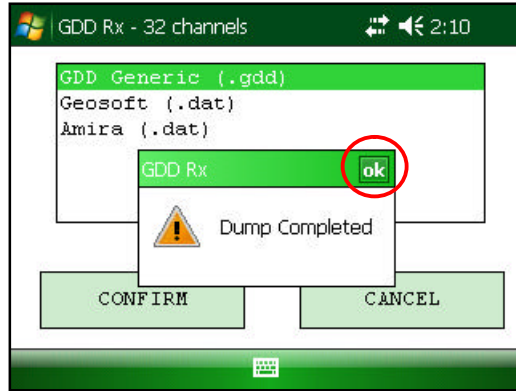
***It is recommended to save your files in the CF Card folder to make sure that you will have enough disk space. Do not save the data in My Documents folder.**



6. Enter the file name and click Save (the saving operation can take several minutes).



7. The following screen appears.

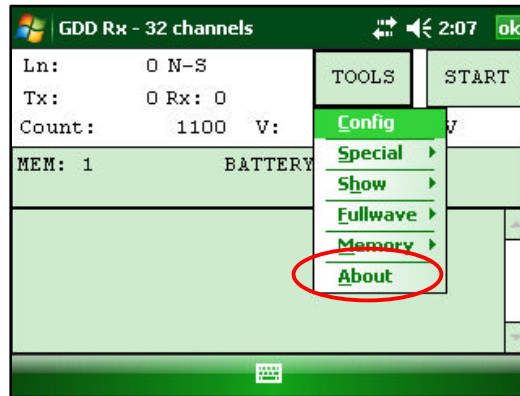


8. Click OK to close the pop-up dialog box.

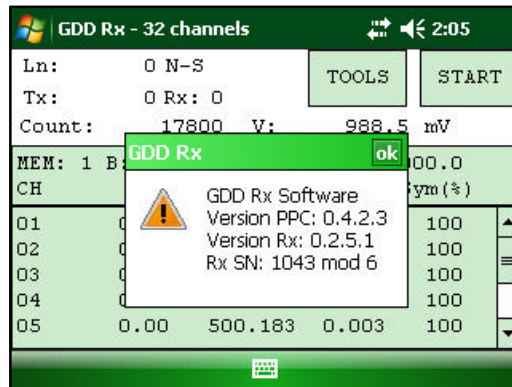
7.6 About option

The *About* option is used to display the software version number.

1. Select Tools | About

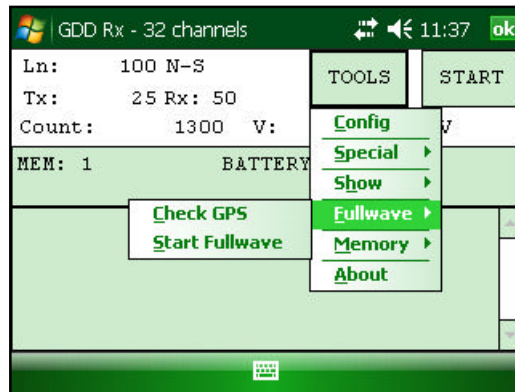


2. The following screen appears.

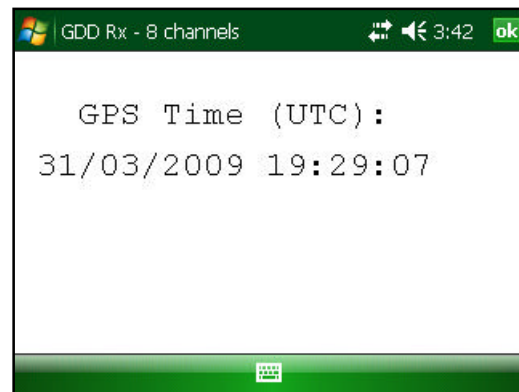
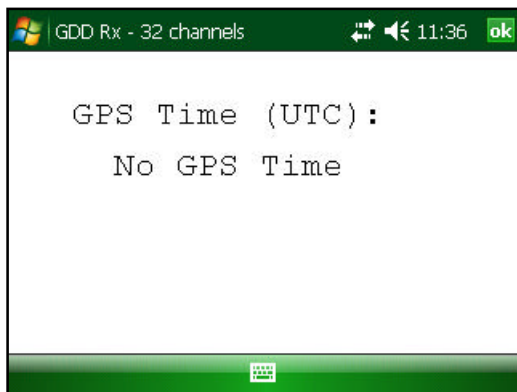


7.7 Fullwave

The fullwave menu is for accumulating raw data from the channels with a timestamp synchronised via a GPS satellite in a fullwave file format. To use these functions, your receiver must be equipped with an internal GPS.



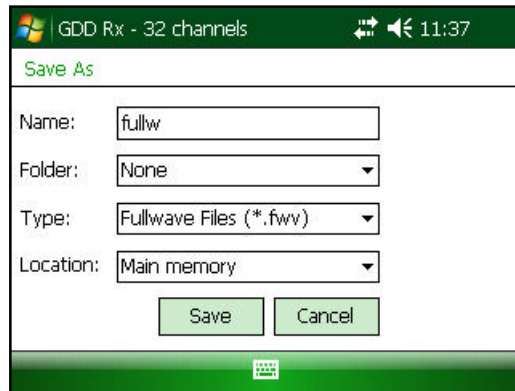
1. Select Tools | Fullwave | Check GPS



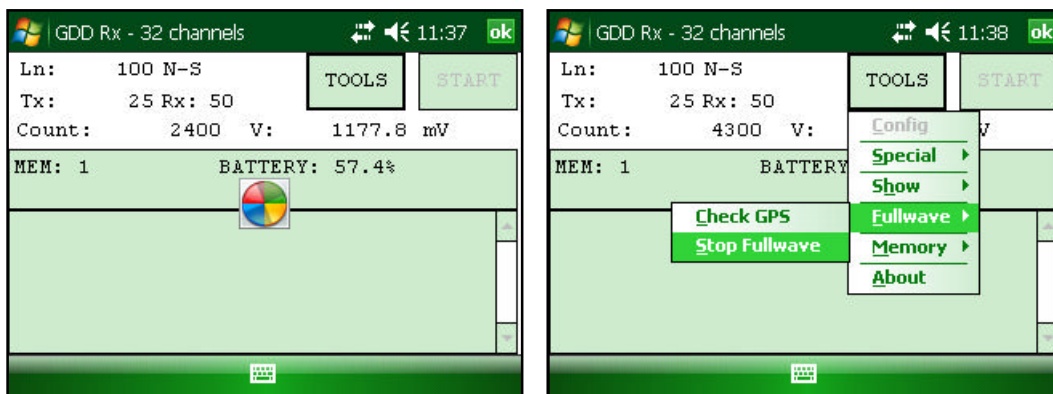
If you see No GPS Time, either the internal GPS module cannot receive any data from a satellite or your receiver does not have this option.

2. To begin the data acquisition, select Tools | Fullwave | Start Fullwave

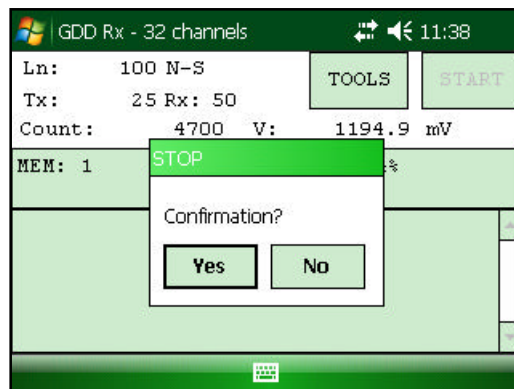
3. You will be prompted to name your file.



4. The following icon will appear and data will be accumulating until you stop the acquisition by selecting Tools | Fullwave | Stop Fullwave



5. Click Yes to confirm.



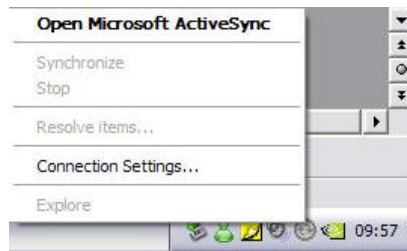
8 Transferring data

8.1 ActiveSync installation and settings

1. In order to establish communication between the Allegro 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 will appear 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.*



8.2 Connecting the Allegro Mx with a desktop PC

1. Turn ON the PDA



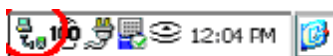
2. Insert the Allegro Mx in the USB power dock . Connect the USB power dock to the desktop PC with the USB Plug.



3. The desktop *ActiveSync* icon is now green.



4. A small *PCLink* icon appears on the Allegro Mx taskbar.

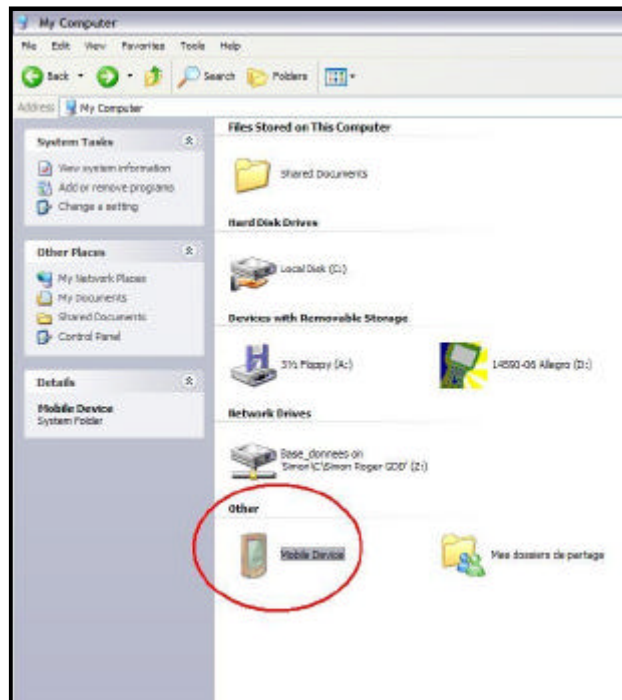


8.3 Transferring file(s) from the Allegro Mx to a desktop PC

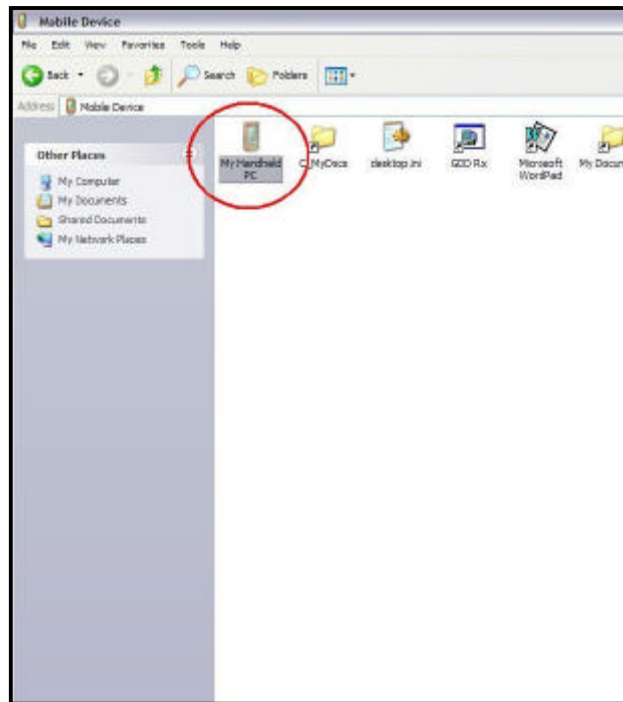
1. Double click on the *My Computer* icon on your desktop PC.



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



3. Double click on the *My Handheld PC* icon.

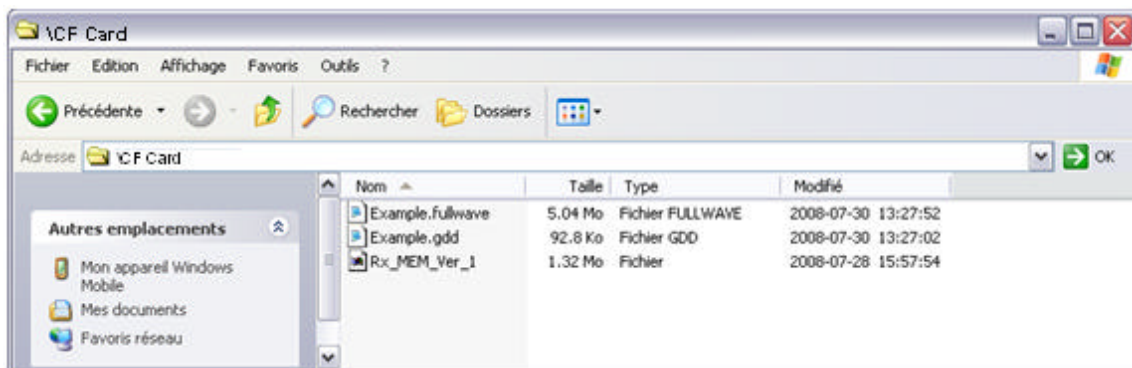


4. Double click on the CF Card folder (if it is the location you chose for your saved files).



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

The data file is named: File_Name.gdd
The fullwave file is named: File_Name.fullwave

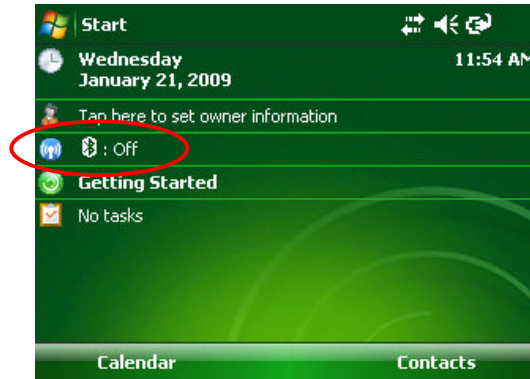


6. Open the saved files with Notepad or Excel.

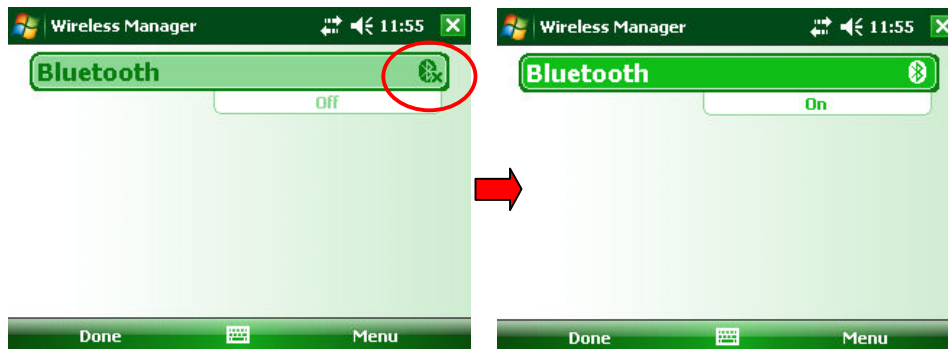
9 Bluetooth configuration

9.1 Bluetooth partnership configuration

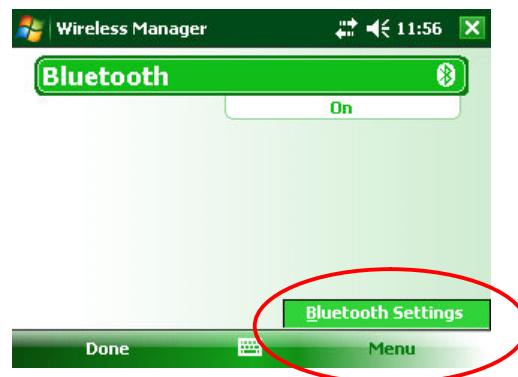
1. In the main screen of the Allegro Mx, click on the Bluetooth icon.



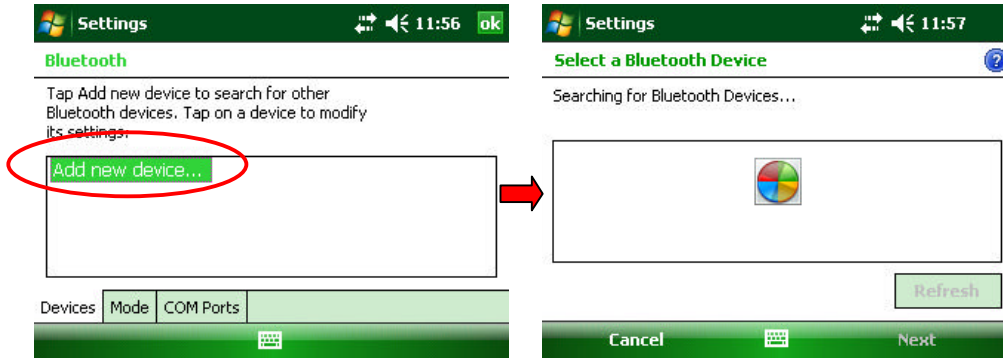
2. If Bluetooth is off, click on the Bluetooth icon to turn Bluetooth on.



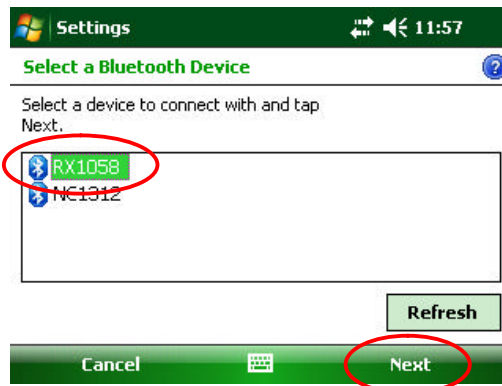
3. Click on Menu and select Bluetooth Settings.



4. Click on Add new device.



5. Select your device (the serial number of your receiver) and click Next.



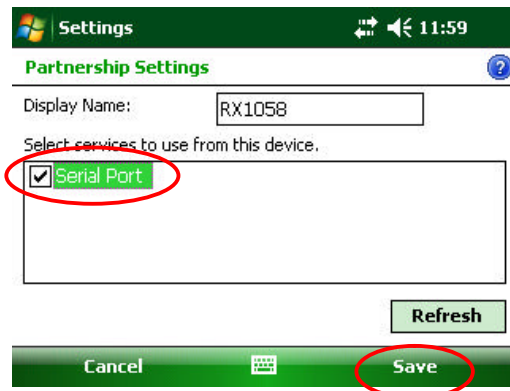
6. Enter the passkey 1234 and click Next. The Device Added window appears for few seconds.



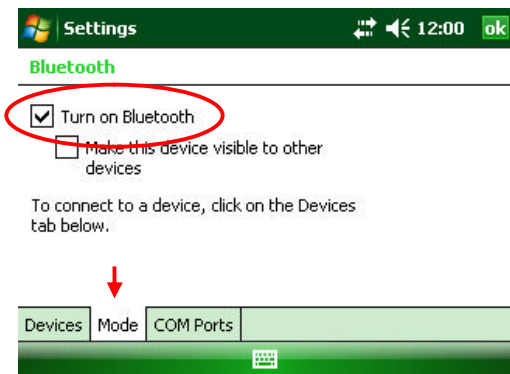
7. Click on your device (the serial number of your receiver) to modify its settings.



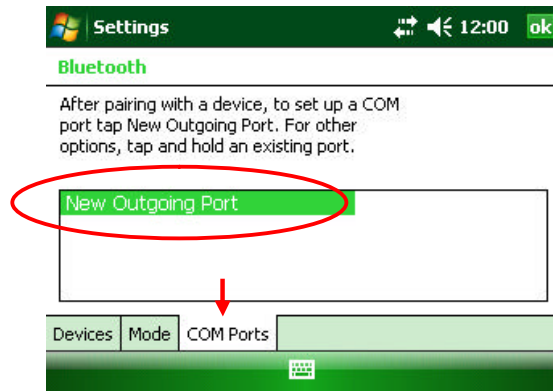
8. Check Serial Port and click Save.



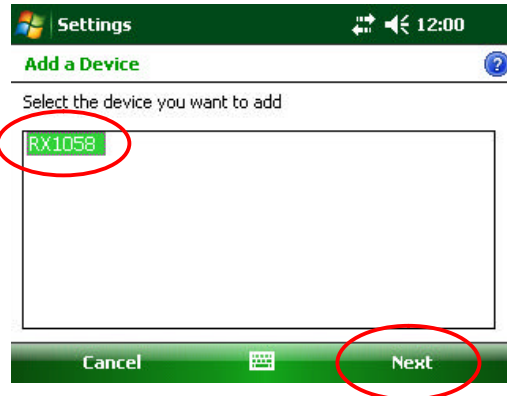
9. Click on Mode tag. Turn on Bluetooth should be checked.



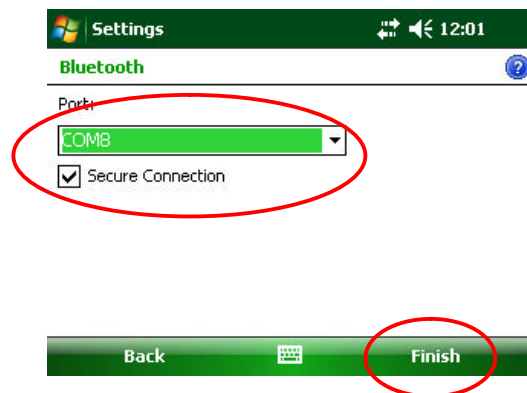
10. Click on COM Ports tag and select New Outgoing Port.



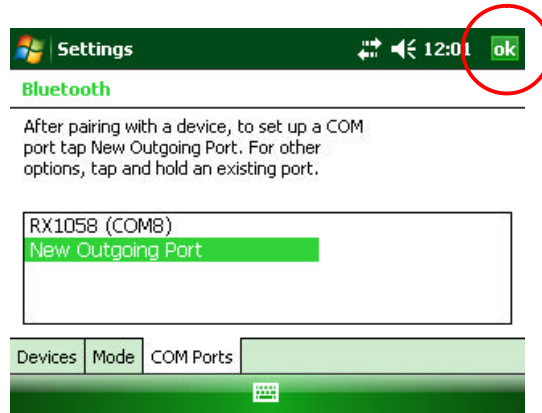
11. Select your device (the serial number of your receiver) and click Next.



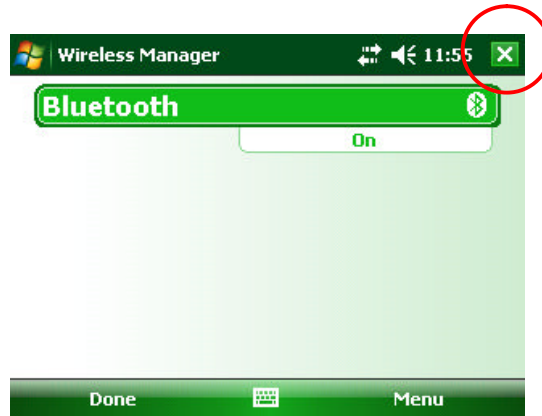
12. Select COM8 and check Secure Connection. Click Finish.



13. Click OK to close the COM Ports settings.



14. Click X to close the Wireless Manager.



10 GDD Rx software update

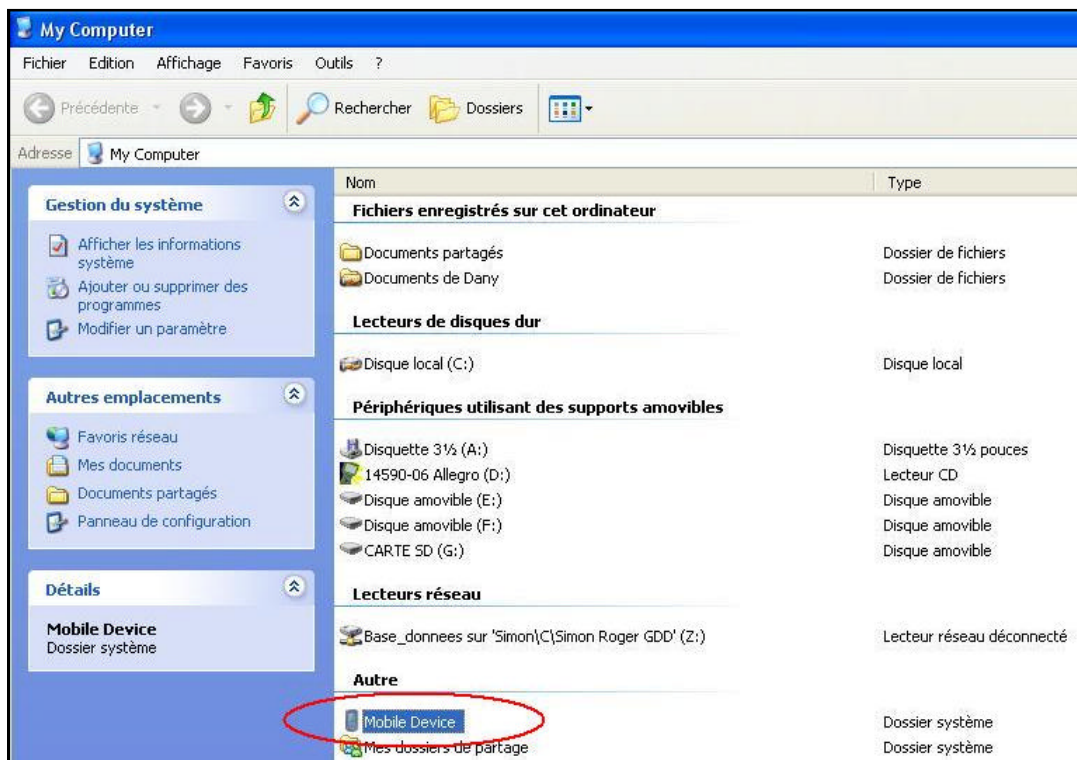
1. Place the Allegro into the USB/Power Dock. The USB/Power Dock must be connect ed to the desktop PC with the USB plug. The Allegro automatically turns on.



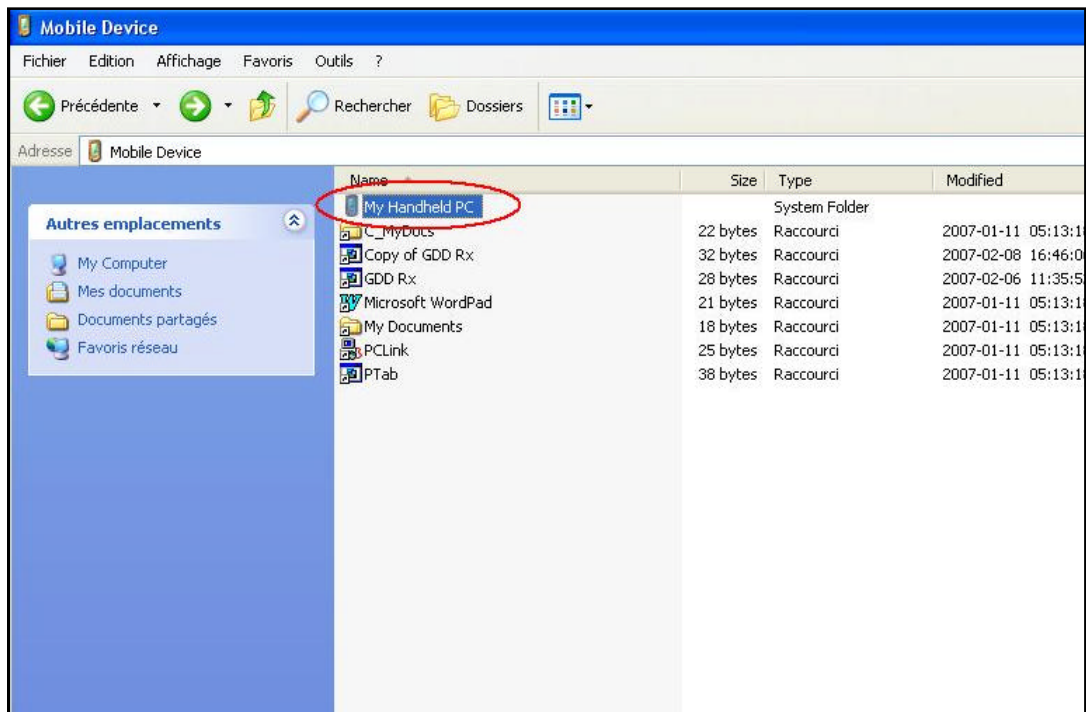
2. Double click on the *My Computer* icon on the desktop of your PC.



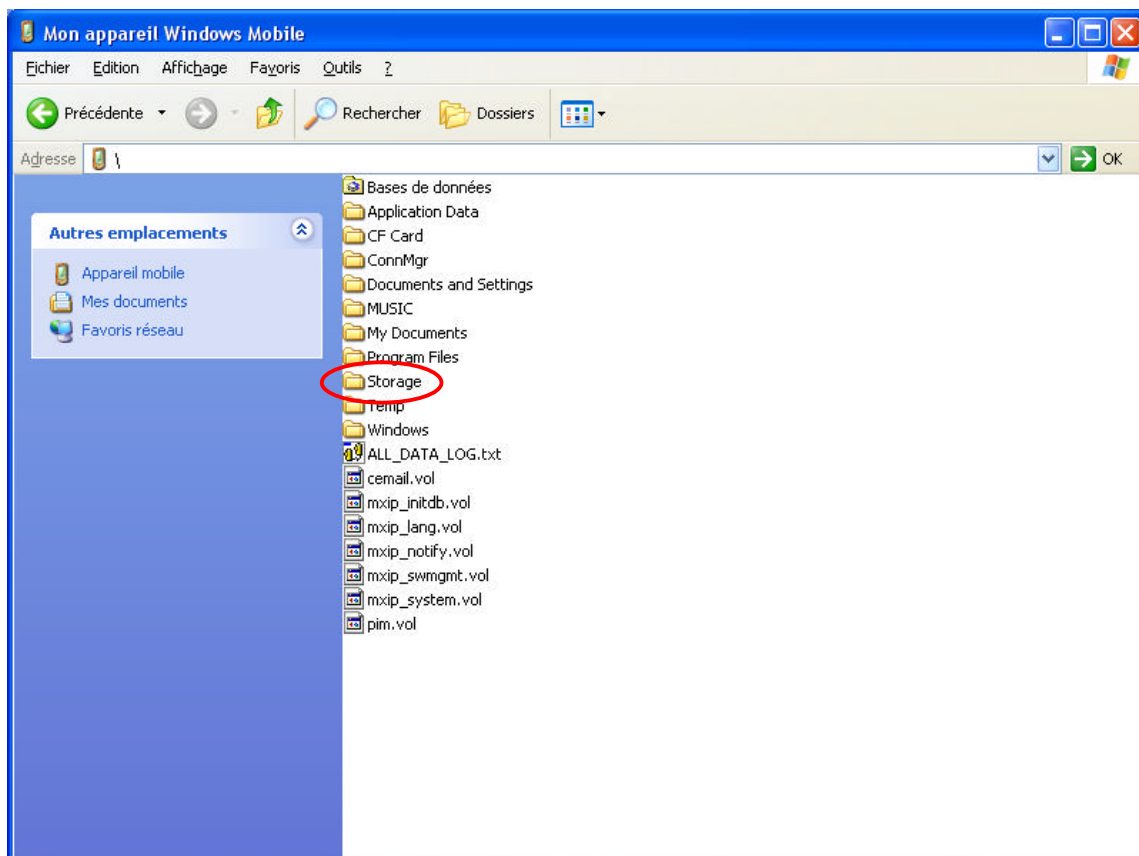
3. Double click on the Mobile Device icon.



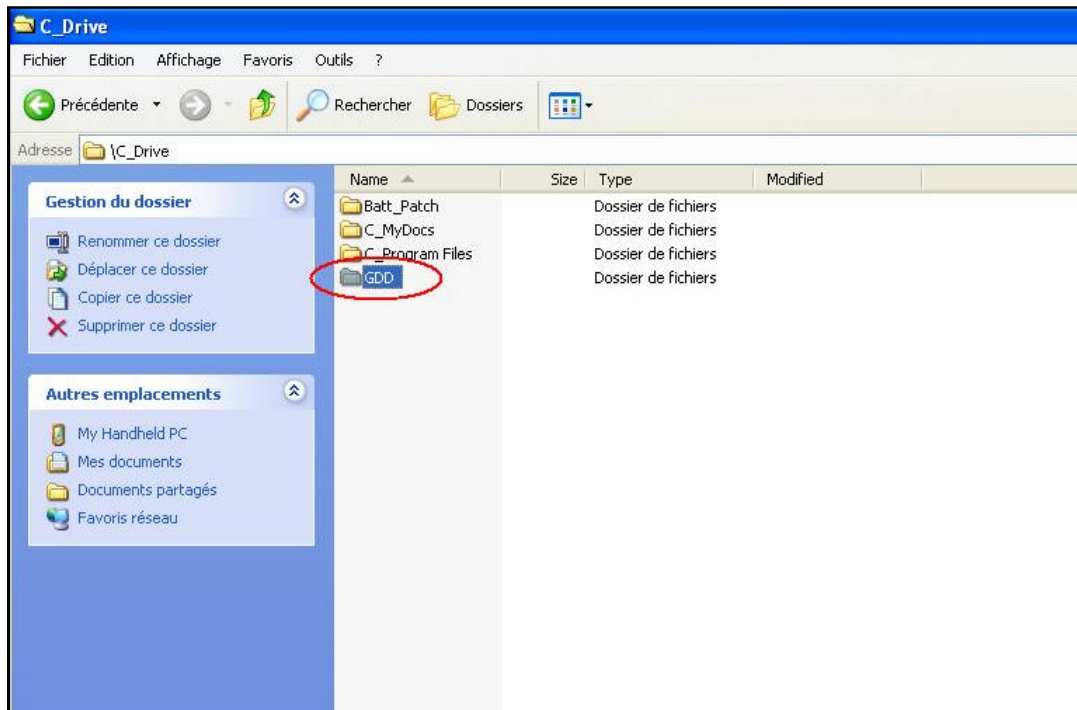
4. Double click on the MyHandheld PC icon.



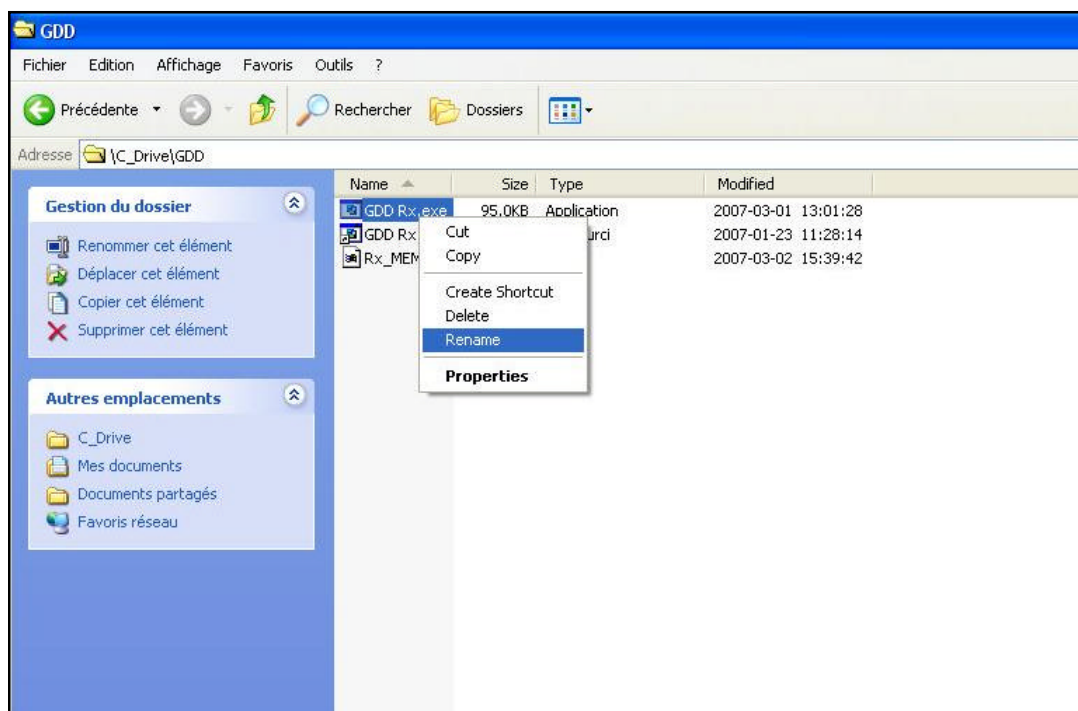
5. Double click on the Storage icon.



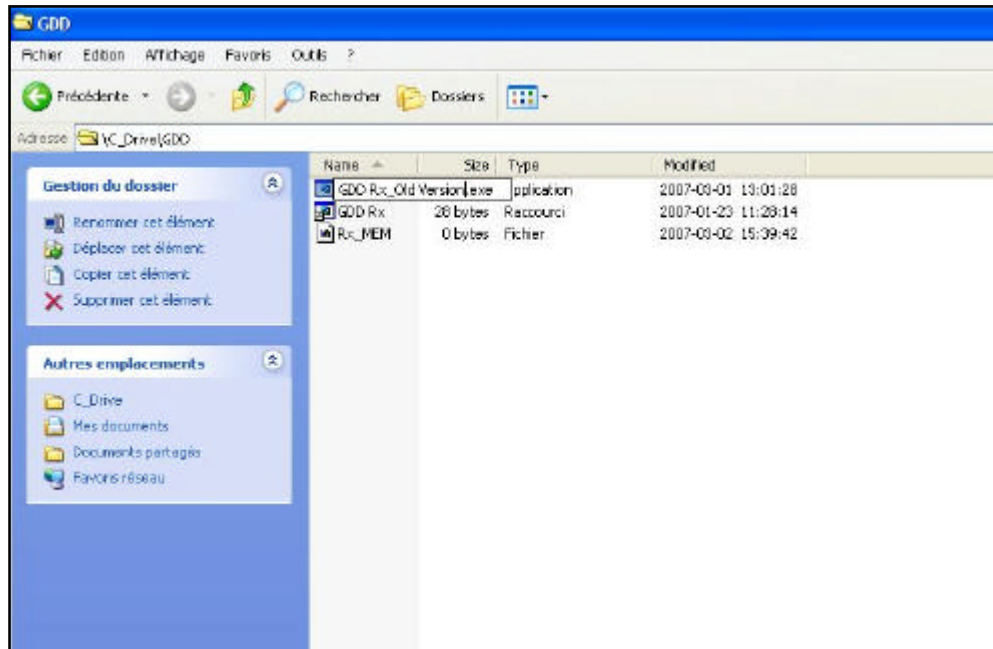
6. Double click on the GDD icon.



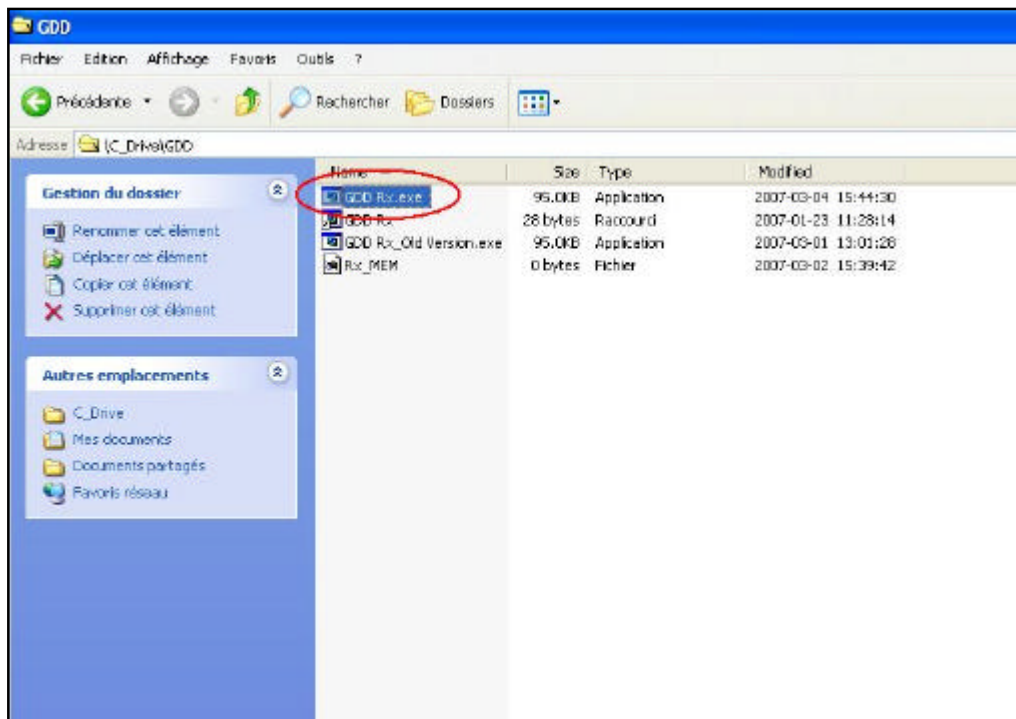
7. Rename the old version of the software to keep a backup on your Allegro Mx. Right click on the GDD Rx.exe icon and click on the Rename option.



8. Rename the software (example: GDD_Rx_Old Version.exe)

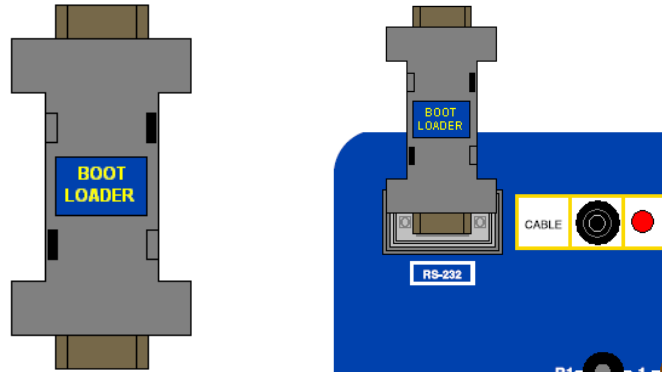


9. Use the drag and drop or the copy and paste functions to move the new GDD Rx.exe software from your computer to the GDD folder of your Allegro MX.

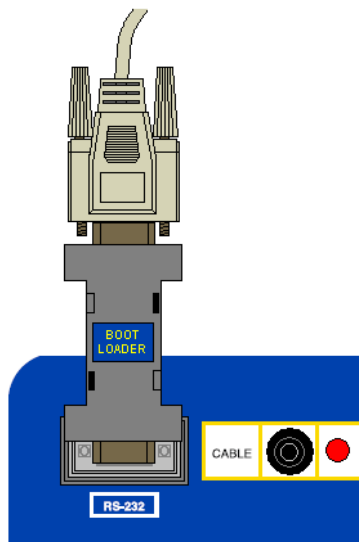


11 GRx8-32 CPU update

1. Insert the *Bootloader* key into the *RS-232* connector.



2. Connect one end of the serial communication cable to the *Bootloader* key.



3. Connect the other end of the serial communication cable to the COM 1 or 2 port on your desktop PC.



4. Select the *Cable* option with the *Cable / Wireless* switch.



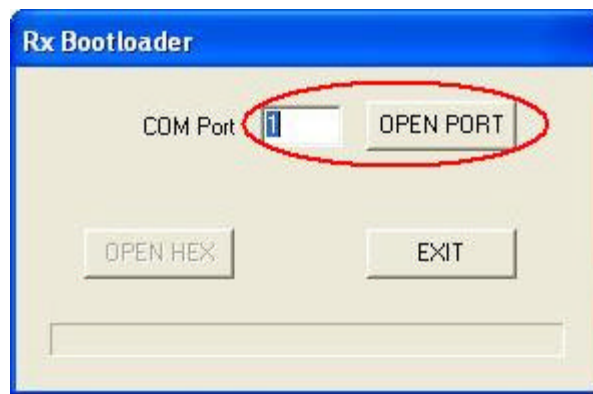
5. Select the SELF -TEST mode with the ON/OFF/SELF -TEST switch.



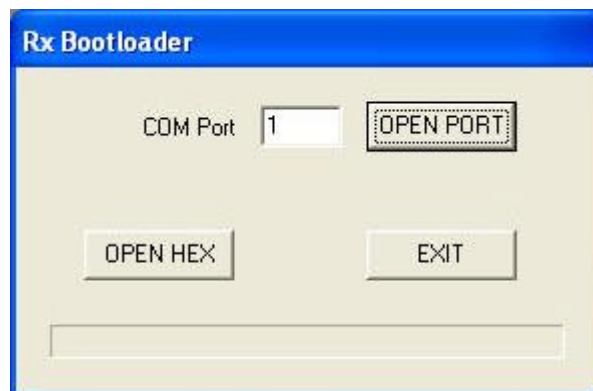
6. Double click on the *Rx HEX_Decoder* icon on the desktop of your PC.



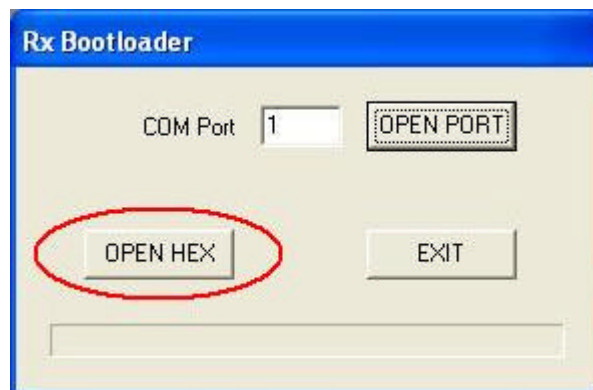
7. Enter the serial port number and click OPEN PORT.



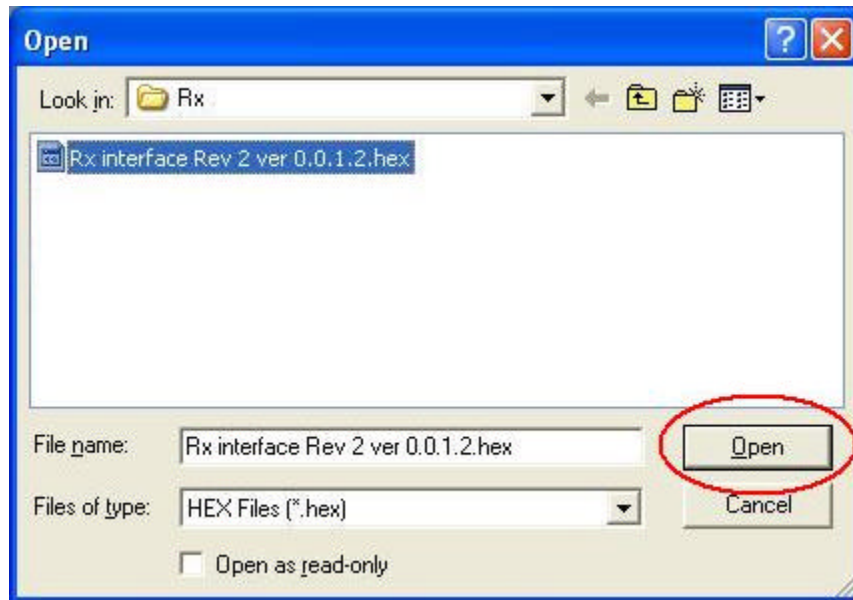
8. The following screen appears.



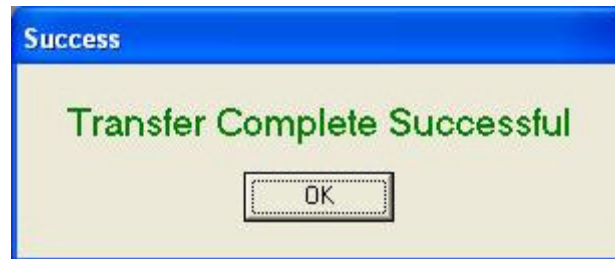
9. Click OPEN HEX.



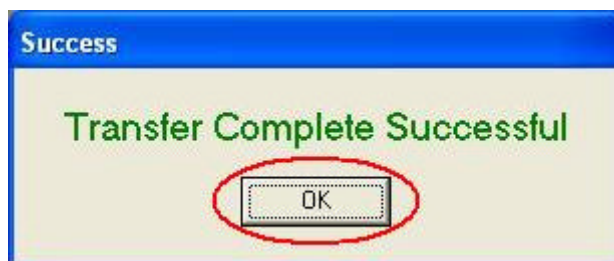
10. Select the new version of the CPU software (.hex file) and click OPEN.



11. At the end of the transfer, the following screen appears.



12. Click OK to close the window.



12 Troubleshooting

This section explains some problems that could occur when using the GDD Rx8-32 as well as proposed solutions.

For any issues regarding the Allegro Mx pocket PC other than these related to the GDD program, please refer to the user manual of the Allegro Mx available on the Allegro Mx CD sent by GDD.

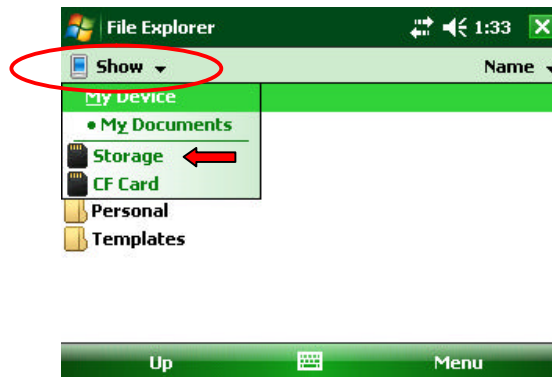
➤ Problem :

The GDD Rx program's shortcut has disappeared from the Start menu of the main screen of the Allegro Mx pocket PC.

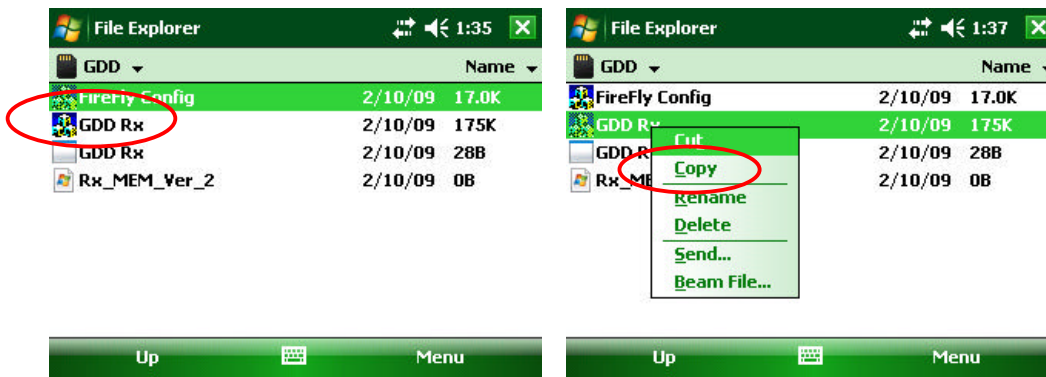
✓ Answer:

This might happen if the Allegro Mx main battery has been completely discharged. You can recreate the shortcut on the desktop by following these steps:

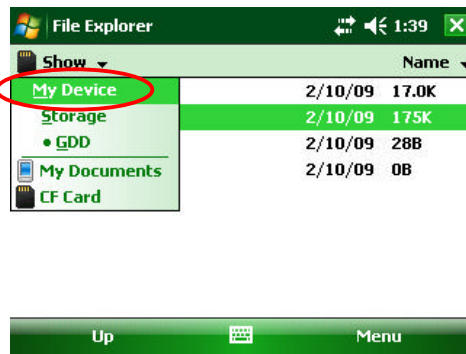
1. Click on Start menu and select File Explorer.
2. Click on the upper bar and select Storage.



3. Click and hold your pencil on the GDD Rx file and select Copy.



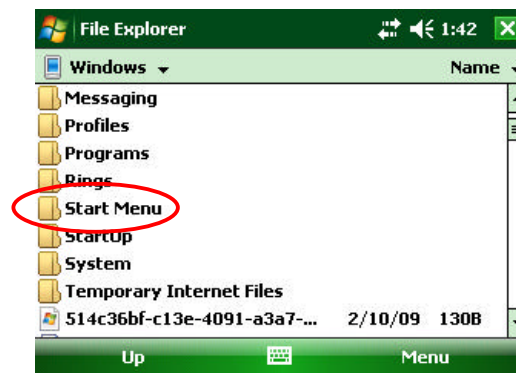
4. Click on the upper bar and select My Device.



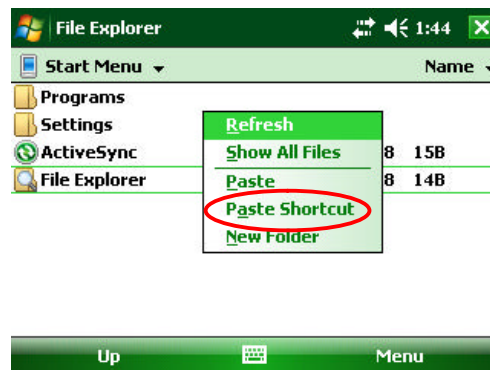
5. Select Windows.



6. Select Start Menu.



7. Click and hold your pencil on an unoccupied spot on the window until the pop-up menu appears. Select Paste Shortcut.



➤ Problem :

The receiver is not on line when the On-Off switch is at 'On'.

✓ Answer :

- In Cable mode, the receiver will only be on line when the GDD Rx program will be active on the pocket PC.
- If the receiver's batteries power rating is below the critical threshold, the receiver will not come on line. (See the Power section for more details.)

➤ Problem :

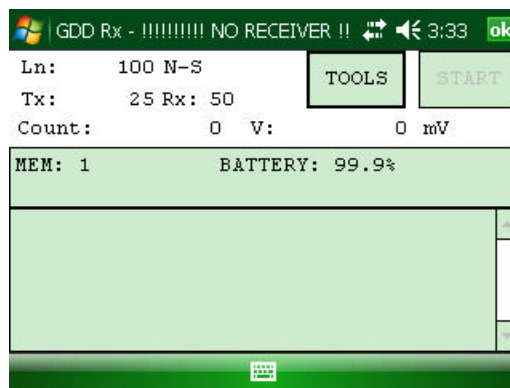
The charger's LED is not turned on when it is plugged in the CHARGER connector of the receiver.

✓ Answer :

- Verify that the 120V or 240V (black) charger's cable is plugged in the charger and that the charger is connected to a power source.
- Verify that the connector is properly inserted in the CHARGER connector.
- Verify that the "Internal battery / External battery" switch is on "Internal battery" position.
- Verify that the charger is working properly: unplug the charger from the receiver and from his power source. Plug it again in the power source. The LED should be red then turn green and finally it will turn off.

➤ Problem :

The message: 'GDD Rx – No Receiver' is shown in the program bar of the GDD Rx program. It stays on the bar even if the Allegro Mx is connected to the receiver.



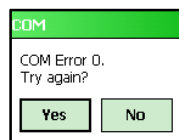
✓ Answer

- Check that the receiver's On-Off switch is at On and that the LED is on.
- Verify that the receiver's batteries are powered enough and not within the critical threshold limit.
- In Cable mode, verify that the cable is plugged correctly on the receiver and on the Allegro Mx pocket PC. If you are using the D-SUB 9 to D-SUB 9 cable, try replacing this cable by a D-SUB 9 to Amphenol 6 cable (or the opposite if you were using a D-SUB 9 to Amphenol 6 as your primary cable).

- In Cable mode, make sure your cable is connected to the COM1 port of the Allegro Mx pocket PC.
- In Bluetooth mode, close the GDD Rx program and try to start it again. If the program does not detect the receiver in Bluetooth mode, open the program in RS232 mode and save all your data. When your data are saved, push and hold the ON button of the Allegro to make a reset.

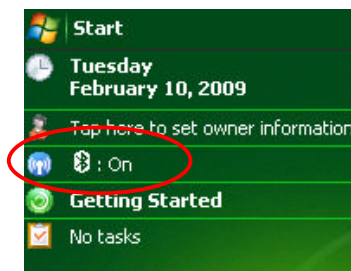
➤ Problem :

In Bluetooth mode, the following message appears.

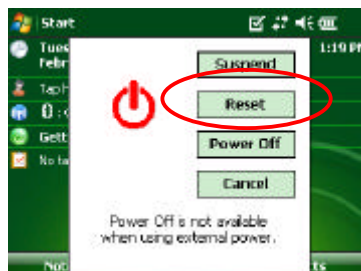


✓ Answer :

- Make sure that the Cable / Wireless switch is on Wireless position and that the receiver is turned on.
- Verify that the Bluetooth of your Allegro Mx is ON. If the Bluetooth is Off, see *Section 9.1* to know how to turn it on.



- See *Section 9.1* to know how to verify if a partnership has been established between your receiver and your Allegro Mx.
- Reset your Allegro Mx by pressing and holding the Power button. The following message appears. Select Reset.



13 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 IP Receiver 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.

Annex 1 – Geometrical parameters

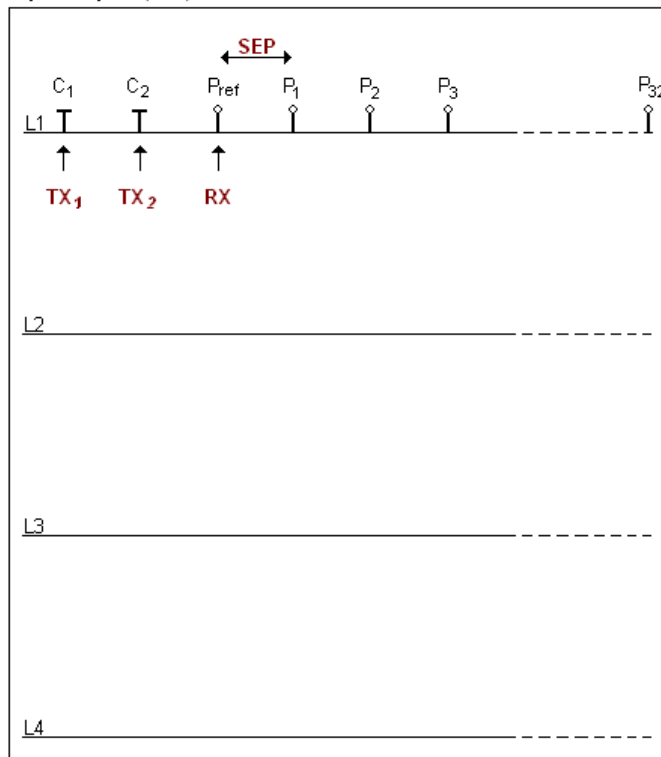
This annex explains how to configure your receiver according to the selection of the electrode array.

Electrode array	Geometrical parameters to enter				Maximum number of dipoles
Dipole-Dipole	Tx1	Tx2	Rx	Sep	32
Pole-Dipole		Tx2	Rx	Sep	32
Pole-Pole		Tx2	Rx	Sep	32
Gradient	Tx1	Tx2	Rx	Sep	32
Wenner	Tx1	Tx2			1
Schlumberger	Tx1	Tx2		Sep	1

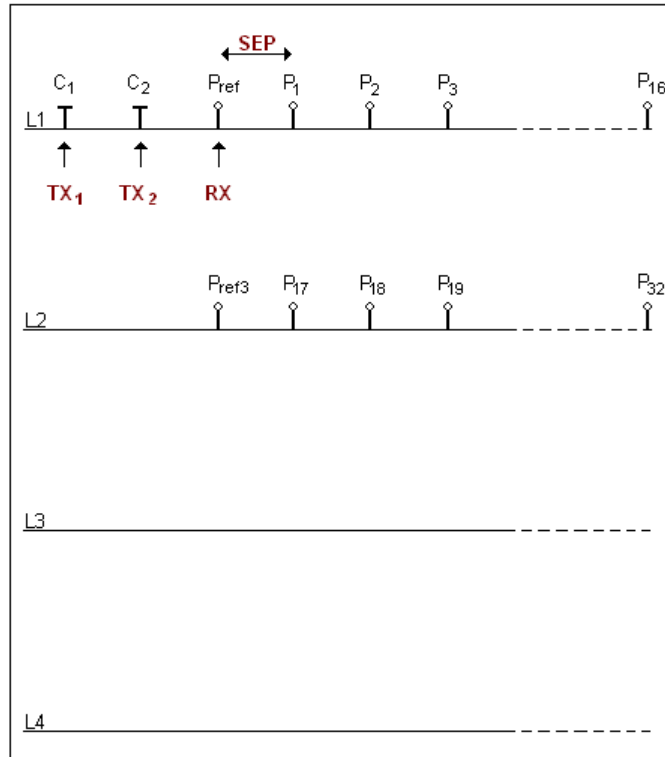
- Tx1: Transmitter first electrode position
- Tx2: Transmitter second electrode position
- Rx: Receiver first electrode position
- Sep: Separation between two receiver electrodes

Note: For all electrode arrays, the Tx line and the RX line(s) can be different.

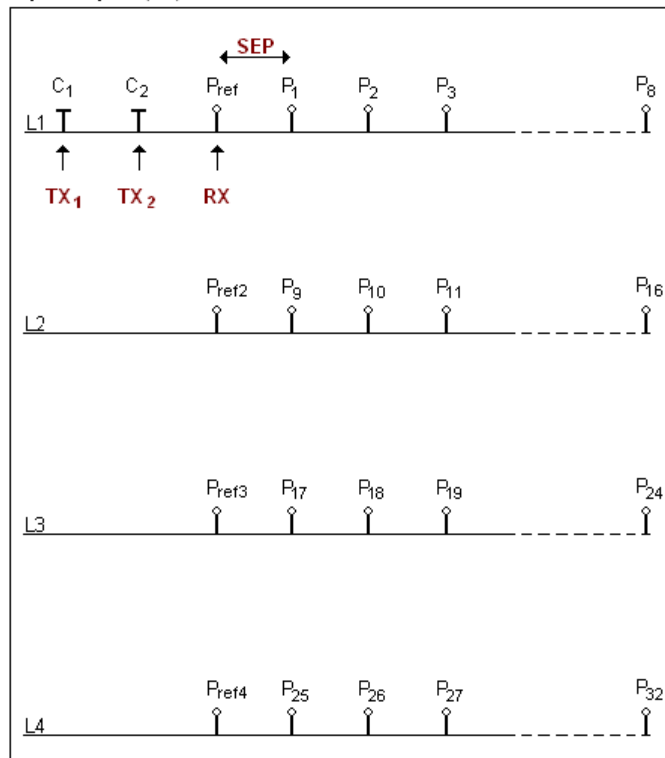
Dipole-Dipole (1/32)



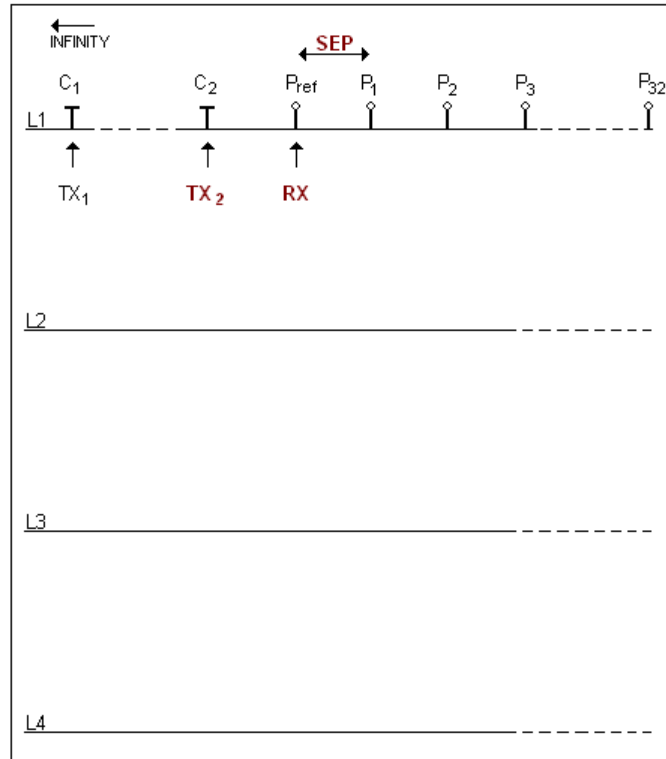
Dipole-Dipole (2/16)



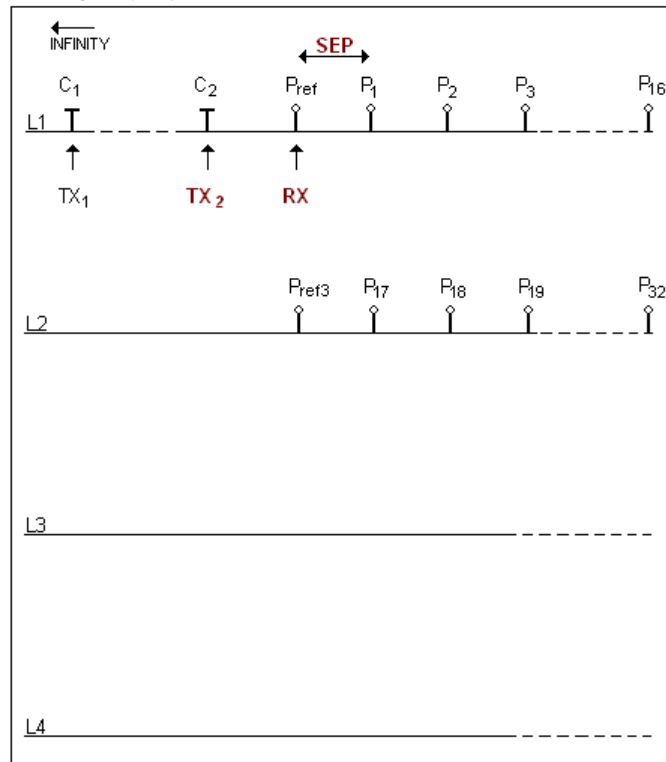
Dipole-Dipole (4/8)



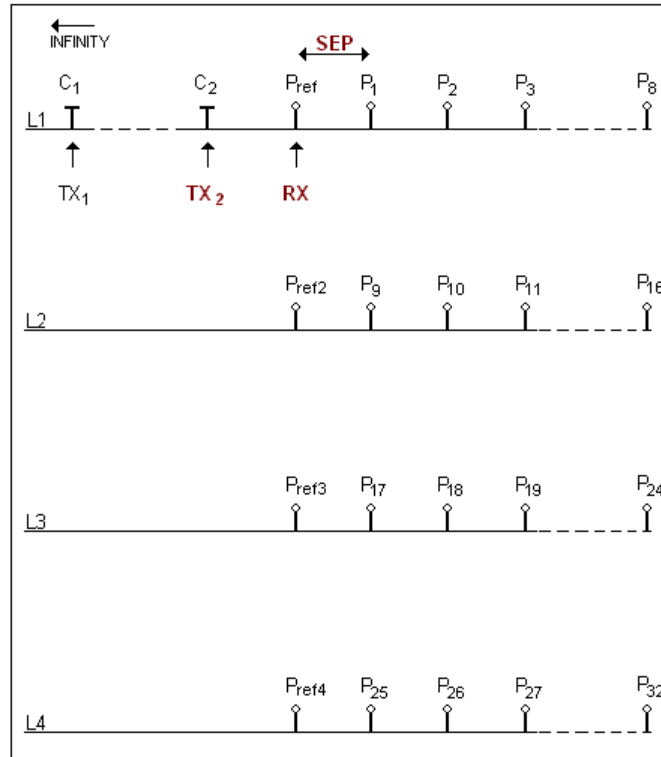
Pole-Dipole (1/32)



Pole-Dipole (2/16)

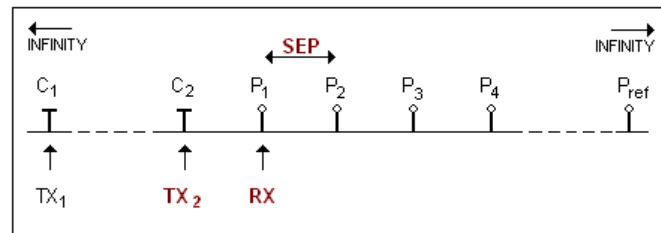


Pole-Dipole (4/8)



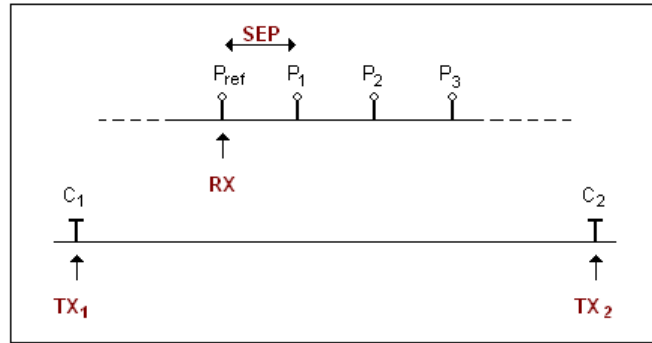
The electrodes C1 has to be set far from the other electrodes, usually 5 times the maximum distance between C2 and P_{ref}.

Pole-Pole



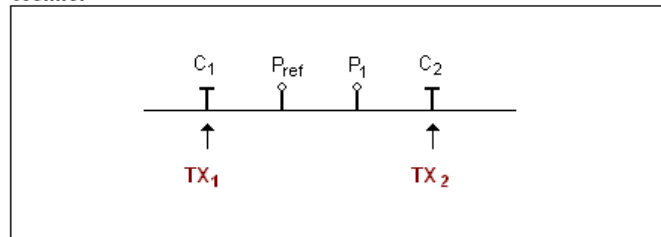
The electrodes C₁ and P_{ref} have to be set far from C₂ and P₁, usually 10 times the maximum distance between C₂ and P₁.

Gradient



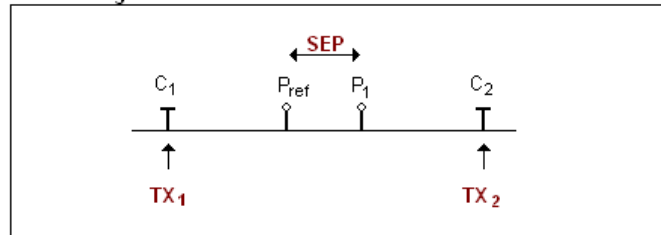
The electrodes C_1 and C_2 are fixed. The electrode P is moved parallel to C inside a zone located in the central part of C_1 , C_2 .

Wenner



The electrodes C_1 , P_{ref} , P_1 and C_2 are equidistant.

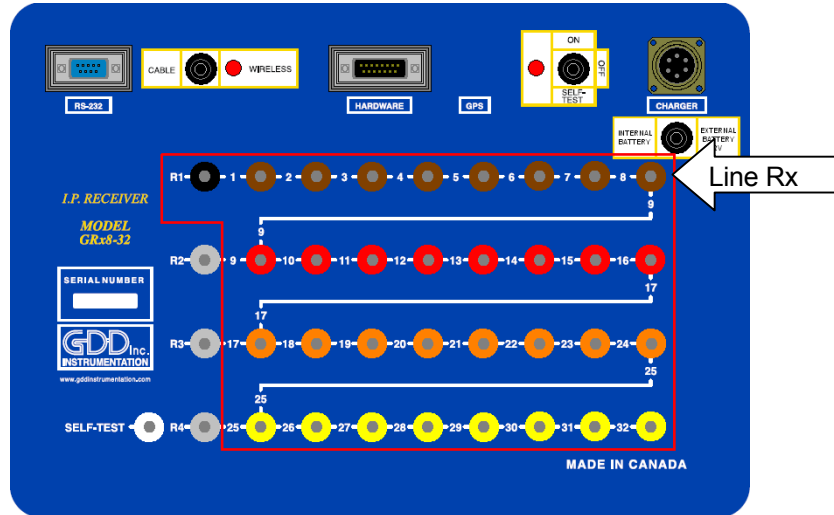
Schlumberger



The electrodes P_{ref} and P_1 are located at the middle point of electrodes C_1 and C_2 .

Annex 2 – 3D Survey

1. Receiver Dipole (1/32)



Electrode number (software parameter)	Electrode position on the receiver	Electrode color on the receiver	Electrode line number (software parameter)
PR1	1 st row – 1 st hole	Black	Line Rx
P1	1 st row – 2 nd hole	Brown	Line Rx
P2	1 st row – 3 rd hole	Brown	Line Rx
P3	1 st row – 4 th hole	Brown	Line Rx
P4	1 st row – 5 th hole	Brown	Line Rx
P5	1 st row – 6 th hole	Brown	Line Rx
P6	1 st row – 7 th hole	Brown	Line Rx
P7	1 st row – 8 th hole	Brown	Line Rx
P8	1 st row – 9 th hole	Brown	Line Rx
P9	2 nd row – 2 nd hole	Red	Line Rx
P10	2 nd row – 3 rd hole	Red	Line Rx
P11	2 nd row – 4 th hole	Red	Line Rx
P12	2 nd row – 5 th hole	Red	Line Rx
P13	2 nd row – 6 th hole	Red	Line Rx
P14	2 nd row – 7 th hole	Red	Line Rx
P15	2 nd row – 8 th hole	Red	Line Rx
P16	2 nd row – 9 th hole	Red	Line Rx
P17	3 rd row – 2 nd hole	Orange	Line Rx
P18	3 rd row – 3 rd hole	Orange	Line Rx
P19	3 rd row – 4 th hole	Orange	Line Rx
P20	3 rd row – 5 th hole	Orange	Line Rx
P21	3 rd row – 6 th hole	Orange	Line Rx
P22	3 rd row – 7 th hole	Orange	Line Rx
P23	3 rd row – 8 th hole	Orange	Line Rx
P24	3 rd row – 9 th hole	Orange	Line Rx
P25	4 th row – 3 rd hole	Yellow	Line Rx
P26	4 th row – 4 th hole	Yellow	Line Rx
P27	4 th row – 5 th hole	Yellow	Line Rx
P28	4 th row – 6 th hole	Yellow	Line Rx
P29	4 th row – 7 th hole	Yellow	Line Rx
P30	4 th row – 8 th hole	Yellow	Line Rx
P31	4 th row – 9 th hole	Yellow	Line Rx
P32	4 th row – 10 th hole	Yellow	Line Rx

Dipole number	Dipole description
D1	P1-PR1
D2	P2-P1
D3	P3-P2
D4	P4-P3
D5	P5-P4
D6	P6-P5
D7	P7-P6
D8	P8-P7
D9	P9-P8
D10	P10-P9
D11	P11-P10
D12	P12-P11
D13	P13-P12
D14	P14-P13
D15	P15-P14
D16	P16-P15
D17	P17-P16
D18	P18-P17
D19	P19-P18
D20	P20-P19
D21	P21-P20
D22	P22-P21
D23	P23-P22
D24	P24-P23
D25	P25-P24
D26	P26-P25
D27	P27-P26
D28	P28-P27
D29	P29-P28
D30	P30-P29
D31	P31-P30
D32	P32-P31

GDD software – Position parameters – Page 1

Position				
LTx	Line Tx	1	P1	5 P5
LRx	Line Rx	2	P2	6 P6
Tx1	C1	3	P3	7 P7
Tx2	C2	4	P4	8 P8
Ref	PR1	>>>> Page 2		
<input checked="" type="checkbox"/>	Tx	NEXT	PREV.	NEXT
<input checked="" type="checkbox"/>	Rx	STN	STN	LINE
				PREV. LINE
				OK

GDD software – Position parameters – Page 2

Position				
LTx	Line Tx	9	P9	13 P13
LRx	Line Rx	10	P10	14 P14
Tx1	C1	11	P11	15 P15
Tx2	C2	12	P12	16 P16
Ref	PR1	>>>> Page 3		
<input checked="" type="checkbox"/>	Tx	NEXT	PREV.	NEXT
<input checked="" type="checkbox"/>	Rx	STN	STN	LINE
				PREV. LINE
				OK

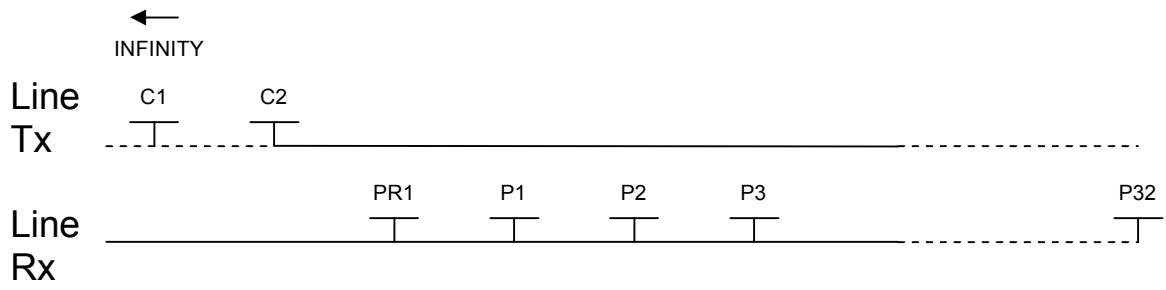
GDD software – Position parameters – Page 3

Position				
LTx	Line Tx	17	P17	21 P21
LRx	Line Rx	18	P18	22 P22
Tx1	C1	19	P19	23 P23
Tx2	C2	20	P20	24 P24
Ref	PR1	>>>> Page 4		
<input checked="" type="checkbox"/>	Tx	NEXT	PREV.	NEXT
<input checked="" type="checkbox"/>	Rx	STN	STN	LINE
				PREV. LINE
				OK

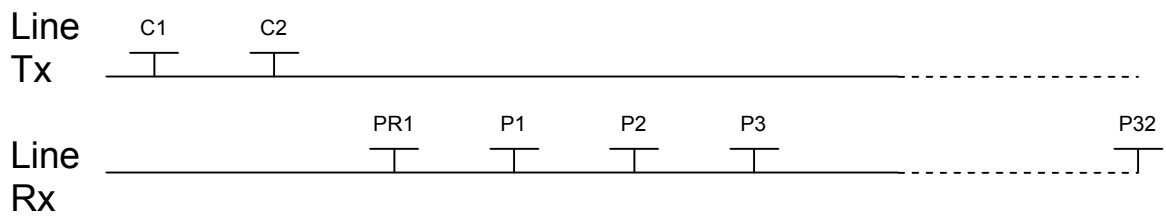
GDD software – Position parameters – Page 4

Position				
LTx	Line Tx	25	P25	29 P29
LRx	Line Rx	26	P26	30 P30
Tx1	C1	27	P27	31 P31
Tx2	C2	28	P28	32 P32
Ref	PR1	>>>> Page 1		
<input checked="" type="checkbox"/>	Tx	NEXT	PREV.	NEXT
<input checked="" type="checkbox"/>	Rx	STN	STN	LINE
				PREV. LINE
				OK

Pole-Dipole (1/32)

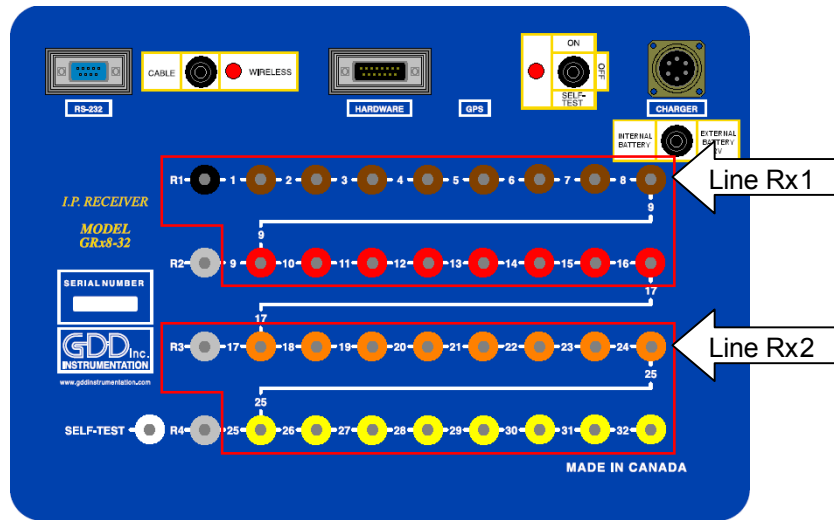


Dipole-Dipole (1/32)



*The transmitter and the receiver can be on the same line.

2. Receiver Dipole (2/16)



Electrode number (software parameter)	Electrode position on the receiver	Electrode color on the receiver	Electrode line number (software parameter)
PR1	1 st row – 1 st hole	Black	Line Rx1
P1	1 st row – 2 nd hole	Brown	Line Rx1
P2	1 st row – 3 rd hole	Brown	Line Rx1
P3	1 st row – 4 th hole	Brown	Line Rx1
P4	1 st row – 5 th hole	Brown	Line Rx1
P5	1 st row – 6 th hole	Brown	Line Rx1
P6	1 st row – 7 th hole	Brown	Line Rx1
P7	1 st row – 8 th hole	Brown	Line Rx1
P8	1 st row – 9 th hole	Brown	Line Rx1
P9	2 nd row – 2 nd hole	Red	Line Rx1
P10	2 nd row – 3 rd hole	Red	Line Rx1
P11	2 nd row – 4 th hole	Red	Line Rx1
P12	2 nd row – 5 th hole	Red	Line Rx1
P13	2 nd row – 6 th hole	Red	Line Rx1
P14	2 nd row – 7 th hole	Red	Line Rx1
P15	2 nd row – 8 th hole	Red	Line Rx1
P16	2 nd row – 9 th hole	Red	Line Rx1
PR3	3 rd row – 1 st hole	Grey	Line Rx2
P17	3 rd row – 2 nd hole	Orange	Line Rx2
P18	3 rd row – 3 rd hole	Orange	Line Rx2
P19	3 rd row – 4 th hole	Orange	Line Rx2
P20	3 rd row – 5 th hole	Orange	Line Rx2
P21	3 rd row – 6 th hole	Orange	Line Rx2
P22	3 rd row – 7 th hole	Orange	Line Rx2
P23	3 rd row – 8 th hole	Orange	Line Rx2
P24	3 rd row – 9 th hole	Orange	Line Rx2
P25	4 th row – 3 rd hole	Yellow	Line Rx2
P26	4 th row – 4 th hole	Yellow	Line Rx2
P27	4 th row – 5 th hole	Yellow	Line Rx2
P28	4 th row – 6 th hole	Yellow	Line Rx2
P29	4 th row – 7 th hole	Yellow	Line Rx2
P30	4 th row – 8 th hole	Yellow	Line Rx2
P31	4 th row – 9 th hole	Yellow	Line Rx2
P32	4 th row – 10 th hole	Yellow	Line Rx2

Dipole number	Dipole description
D1	P1-PR1
D2	P2-P1
D3	P3-P2
D4	P4-P3
D5	P5-P4
D6	P6-P5
D7	P7-P6
D8	P8-P7
D9	P9-P8
D10	P10-P9
D11	P11-P10
D12	P12-P11
D13	P13-P12
D14	P14-P13
D15	P15-P14
D16	P16-P15
D17	P17-PR3
D18	P18-P17
D19	P19-P18
D20	P20-P19
D21	P21-P20
D22	P22-P21
D23	P23-P22
D24	P24-P23
D25	P25-P24
D26	P26-P25
D27	P27-P26
D28	P28-P27
D29	P29-P28
D30	P30-P29
D31	P31-P30
D32	P32-P31

GDD software – Position parameters – Page 1

Position

LTx	Line Tx	1	P1	5	P5
LR1	Line Rx1	2	P2	6	P6
Tx1	C1	3	P3	7	P7
Tx2	C2	4	P4	8	P8
Rf1	PR1	>>>> Page 2			

Tx NEXT PREV. NEXT PREV. OK
 Rx STN STN LINE LINE

Start | 6:27 AM

GDD software – Position parameters – Page 2

Position

LTx	Line Tx	9	P9	13	P13
LR1	Line Rx 1	10	P10	14	P14
Tx1	C1	11	P11	15	P15
Tx2	C2	12	P12	16	P16
Rf1	PR1	>>>> Page 3			

Tx NEXT PREV. NEXT PREV. OK
 Rx STN STN LINE LINE

Start | 6:27 AM

GDD software – Position parameters – Page 3

Position

LTx	Line Tx	17	P17	21	P21
LR2	Line Rx2	18	P18	22	P22
Tx1	C1	19	P19	23	P23
Tx2	C2	20	P20	24	P24
Rf3	PR3	>>>> Page 4			

Tx NEXT PREV. NEXT PREV. OK
 Rx STN STN LINE LINE

Start | 6:27 AM

GDD software – Position parameters – Page 4

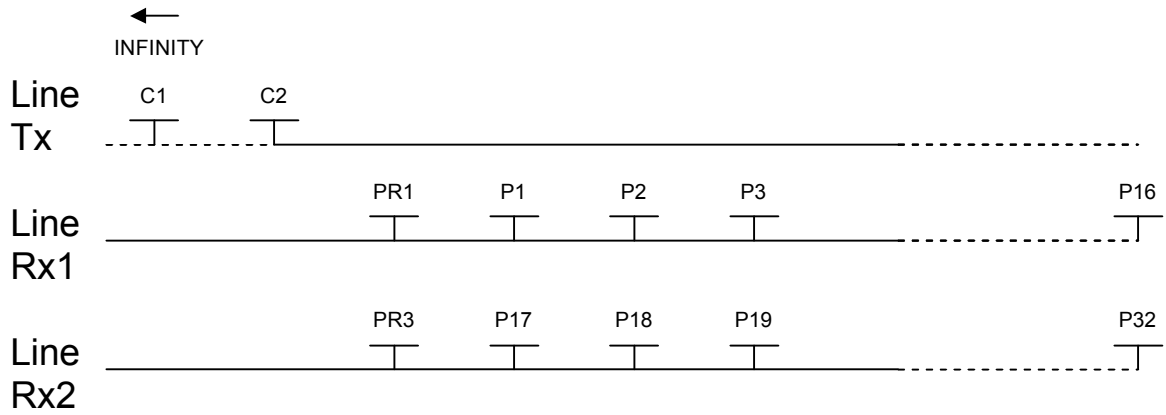
Position

LTx	Line Tx	25	P25	29	P29
LR2	Line Rx2	26	P26	30	P30
Tx1	C1	27	P27	31	P31
Tx2	C2	28	P28	32	P32
Rf3	PR3	>>>> Page 1			

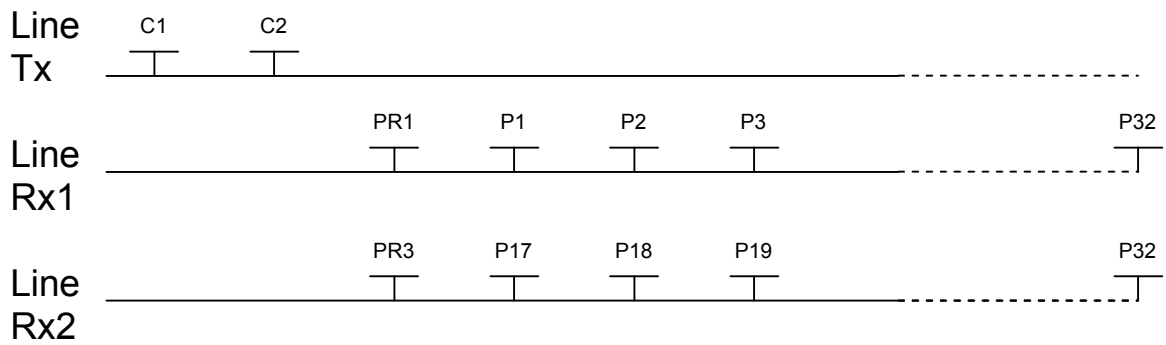
Tx NEXT PREV. NEXT PREV. OK
 Rx STN STN LINE LINE

Start | 6:27 AM

Pole-Dipole (2/16)

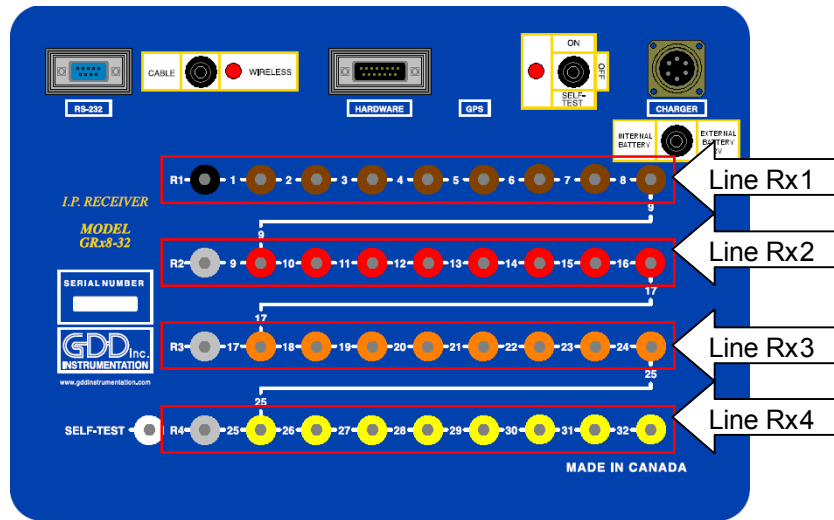


Dipole-Dipole (2/16)



*The transmitter and the receiver can be on the same line.

3. Receiver Dipole (4/8)



Electrode number (software parameter)	Electrode position on the receiver	Electrode color on the receiver	Electrode line number (software parameter)
PR1	1 st row – 1 st hole	Black	Line Rx1
P1	1 st row – 2 nd hole	Brown	Line Rx1
P2	1 st row – 3 rd hole	Brown	Line Rx1
P3	1 st row – 4 th hole	Brown	Line Rx1
P4	1 st row – 5 th hole	Brown	Line Rx1
P5	1 st row – 6 th hole	Brown	Line Rx1
P6	1 st row – 7 th hole	Brown	Line Rx1
P7	1 st row – 8 th hole	Brown	Line Rx1
P8	1 st row – 9 th hole	Brown	Line Rx1
PR2	2 nd row – 1 st hole	Grey	Line Rx2
P9	2 nd row – 2 nd hole	Red	Line Rx2
P10	2 nd row – 3 rd hole	Red	Line Rx2
P11	2 nd row – 4 th hole	Red	Line Rx2
P12	2 nd row – 5 th hole	Red	Line Rx2
P13	2 nd row – 6 th hole	Red	Line Rx2
P14	2 nd row – 7 th hole	Red	Line Rx2
P15	2 nd row – 8 th hole	Red	Line Rx2
P16	2 nd row – 9 th hole	Red	Line Rx2
PR3	3 rd row – 1 st hole	Grey	Line Rx3
P17	3 rd row – 2 nd hole	Orange	Line Rx3
P18	3 rd row – 3 rd hole	Orange	Line Rx3
P19	3 rd row – 4 th hole	Orange	Line Rx3
P20	3 rd row – 5 th hole	Orange	Line Rx3
P21	3 rd row – 6 th hole	Orange	Line Rx3
P22	3 rd row – 7 th hole	Orange	Line Rx3
P23	3 rd row – 8 th hole	Orange	Line Rx3
P24	3 rd row – 9 th hole	Orange	Line Rx3
PR4	4 th row – 2 nd hole	Grey	Line Rx4
P25	4 th row – 3 rd hole	Yellow	Line Rx4
P26	4 th row – 4 th hole	Yellow	Line Rx4
P27	4 th row – 5 th hole	Yellow	Line Rx4
P28	4 th row – 6 th hole	Yellow	Line Rx4
P29	4 th row – 7 th hole	Yellow	Line Rx4
P30	4 th row – 8 th hole	Yellow	Line Rx4
P31	4 th row – 9 th hole	Yellow	Line Rx4
P32	4 th row – 10 th hole	Yellow	Line Rx4

Dipole number	Dipole description
D1	P1-PR1

D2	P2-P1
D3	P3-P2
D4	P4-P3
D5	P5-P4
D6	P6-P5
D7	P7-P6
D8	P8-P7
D9	P9-PR2
D10	P10-P9
D11	P11-P10
D12	P12-P11
D13	P13-P12
D14	P14-P13
D15	P15-P14
D16	P16-P15
D17	P17-PR3
D18	P18-P17
D19	P19-P18
D20	P20-P19
D21	P21-P20
D22	P22-P21
D23	P23-P22
D24	P24-P23
D25	P25-PR4
D26	P26-P25
D27	P27-P26
D28	P28-P27
D29	P29-P28
D30	P30-P29
D31	P31-P30
D32	P32-P31

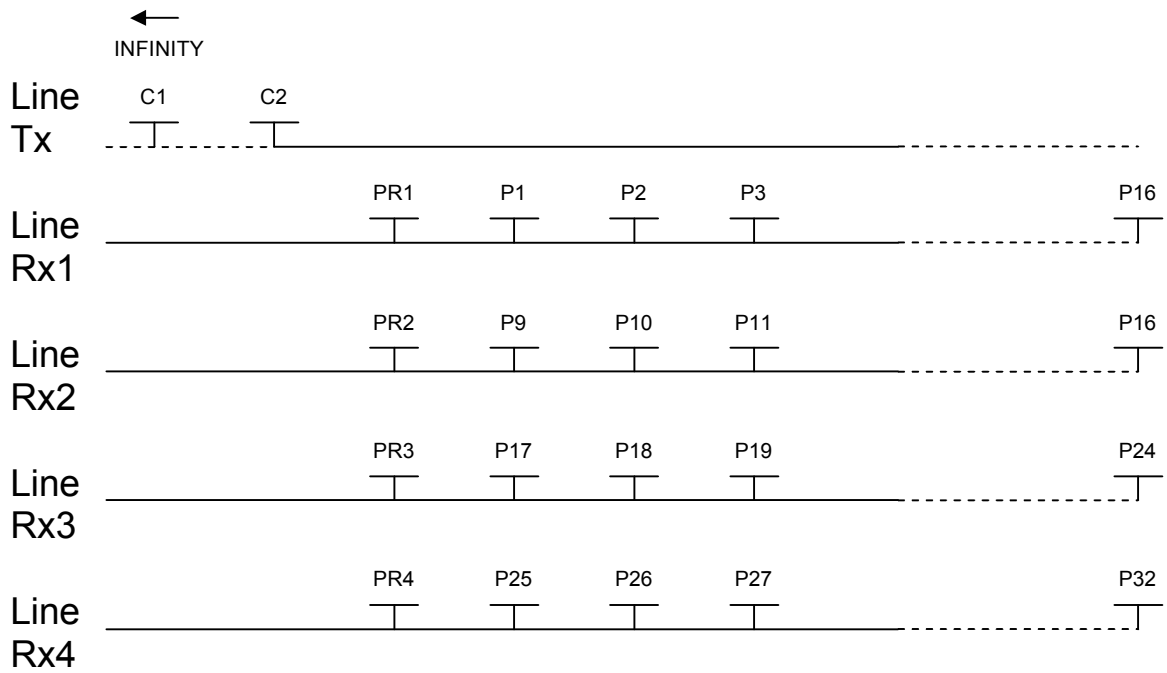
GDD software – Position parameters – Page 1

GDD software – Position parameters – Page 2

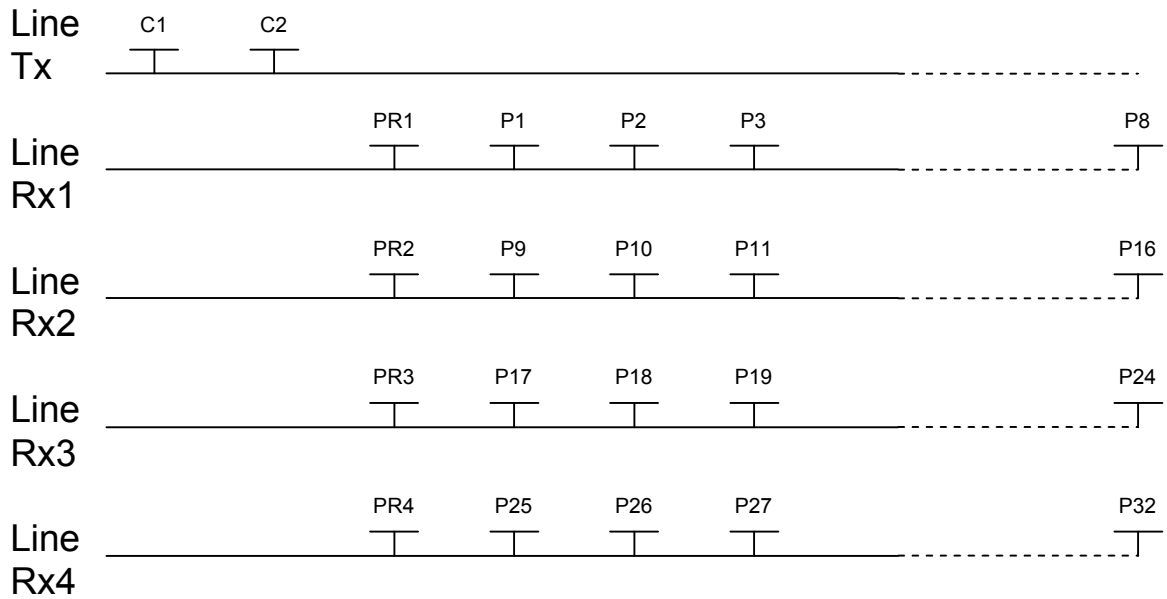
GDD software – Position parameters – Page 3

GDD software – Position parameters – Page 4

Pole-Dipole (4/8)



Dipole-Dipole (4/8)

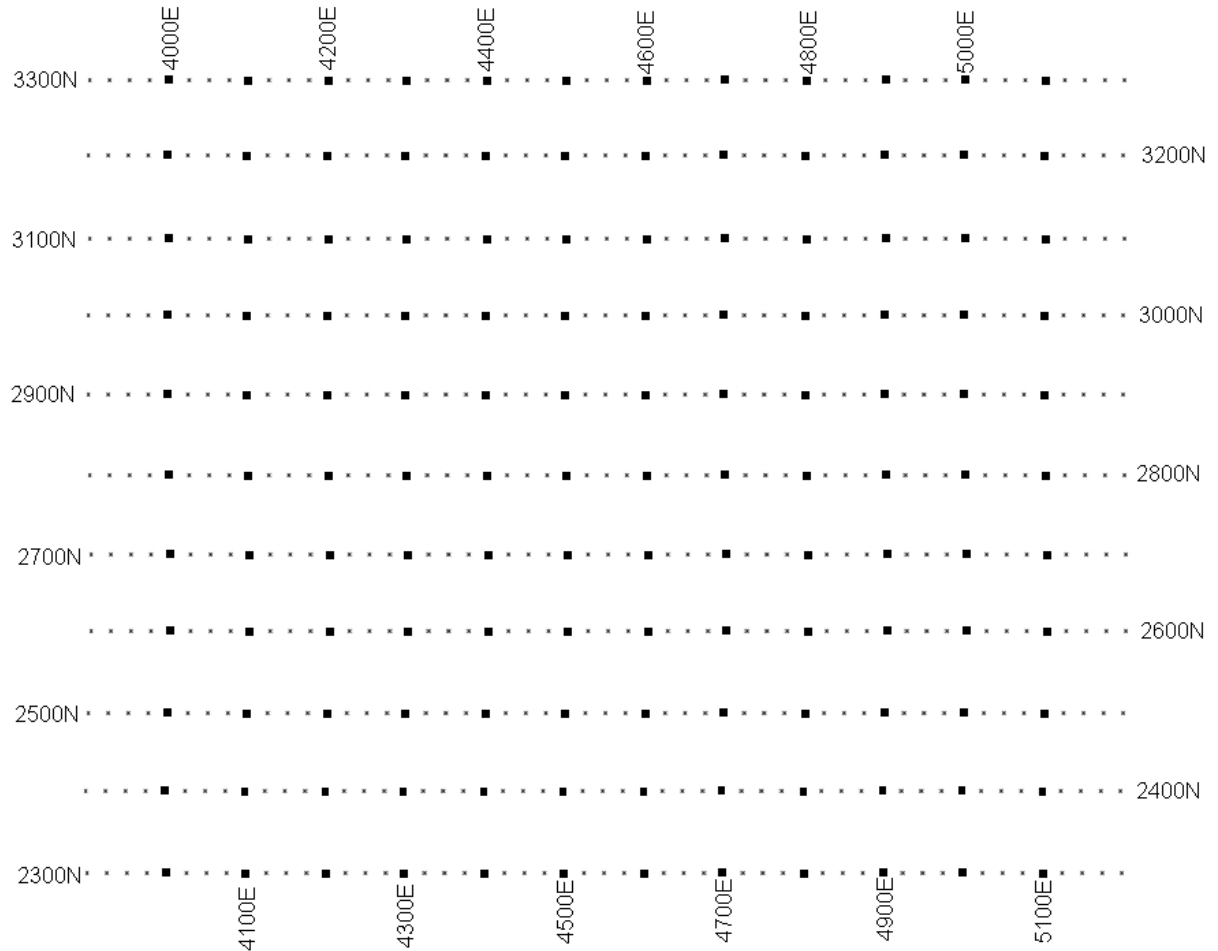


*The transmitter and the receiver can be on the same line.

Annex 3 – Field survey setup

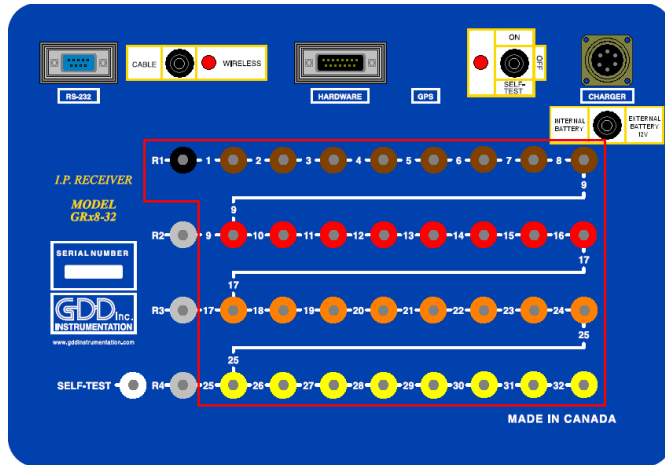
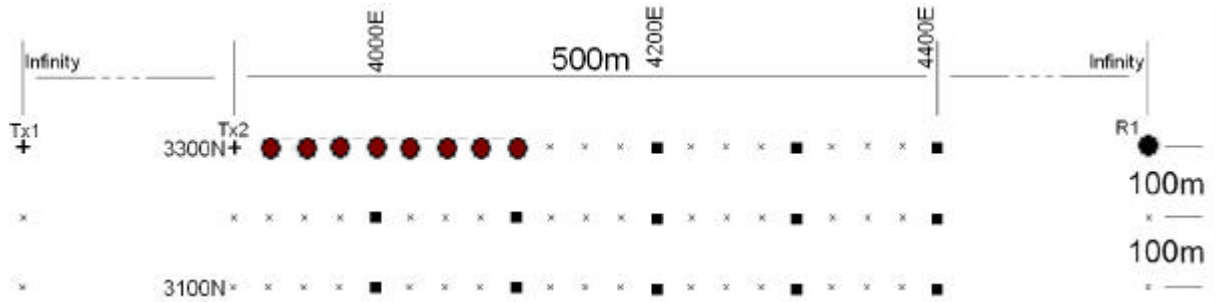
Survey setup

Line information



This survey will consist of 11 lines, each separated by 100m. Each line is 1.3 km long. The examples below will begin at position 3300N-3900E.

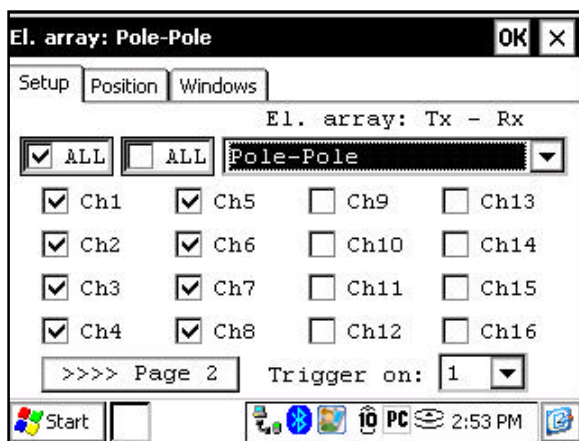
Pole-Pole



- Legend
- x Station
 - + Tx electrode
 - Rx electrode
 - R1 Reference electrode

For this pole-pole setup, 8 electrodes of the GDD-Rx will be used.

1) Select Pole-Pole in the setup page.

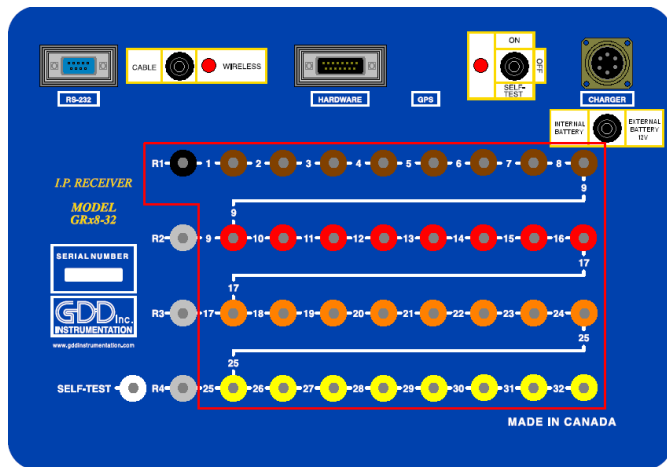
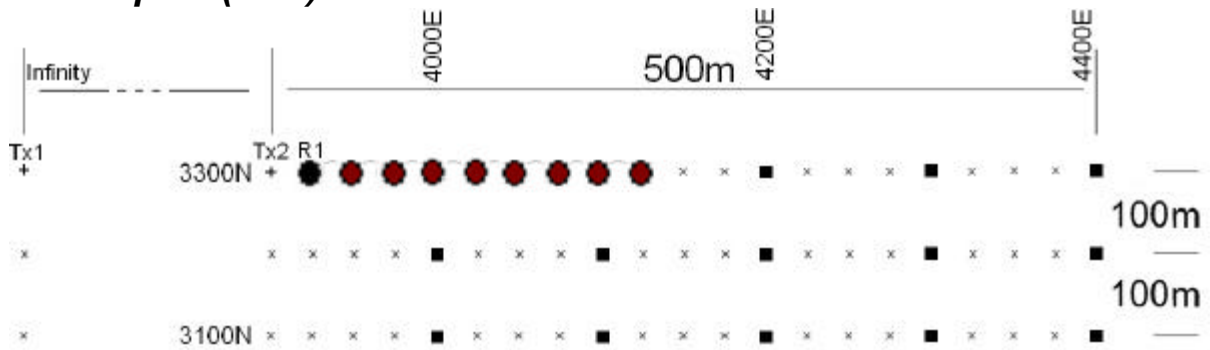


2) Enter the positions corresponding to your survey parameters.

3) If all the values are correct, click the Ok button to continue and take a reading. If something is incorrect, you can modify it on this page.

4) When the reading is done, click the NEXT STN button to increment the positions.

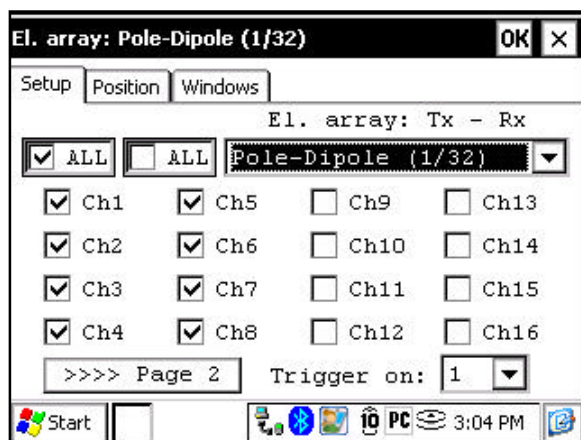
Pole-Dipole (1/32)



- Legend
- x Station
 - + Tx electrode
 - Rx electrode
 - R1 Reference electrode

For this pole-dipole setup, 8 electrodes of the GDD-Rx will be used.

- 1) Select Pole-Dipole(1/32) in the setup page. The Pole-Dipole (2/16) and Pole-Dipole (4/8) options are explained in the 3D survey section at the end of this document.



2) Enter the positions corresponding to your survey parameters.

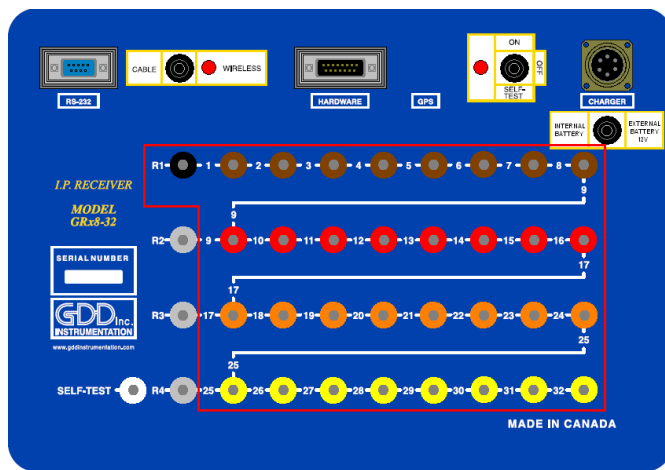
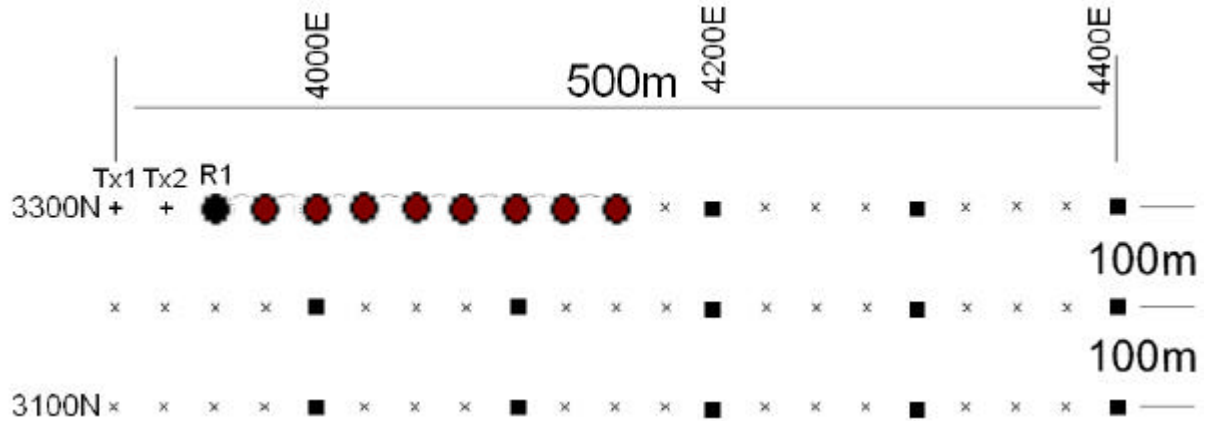
3) If all the values are correct, click the Ok button to continue and take a reading. If something is incorrect, you can modify it on this page.

LTx		1	2	3	4	5	6	7	8
3300		3950		4050					
LRx		3975		4075					
Tx1	9999999	4000		4100					
Tx2	3900	4025		4125					
Ref	3925	>>>> Page 2							

4) When the reading is done, click the NEXT STN button to increment the positions.

LTx		1	2	3	4	5	6	7	8
3300		3975		4075					
LRx		4000		4100					
Tx1	9999999	4025		4125					
Tx2	3925	4050		4150					
Ref	3950	>>>> Page 2							

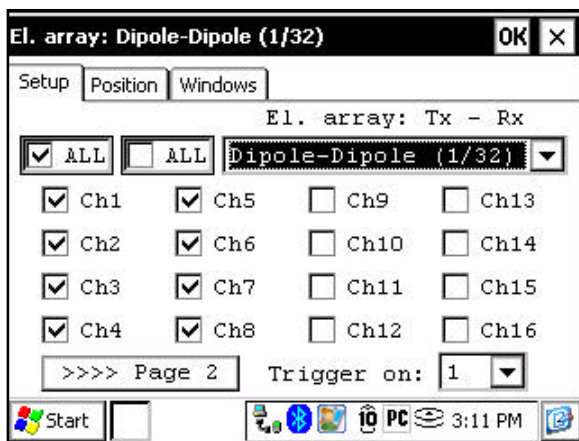
Dipole-Dipole (1/32)



- Legend
- x Station
 - + Tx electrode
 - Rx electrode
 - R1 Reference electrode

For this dipole -dipole setup, 8 electrodes of the GDD -Rx will be used.

1) Select Dipole-Dipole (1/32) in the setup page.



2) Enter the positions corresponding to your survey parameters.

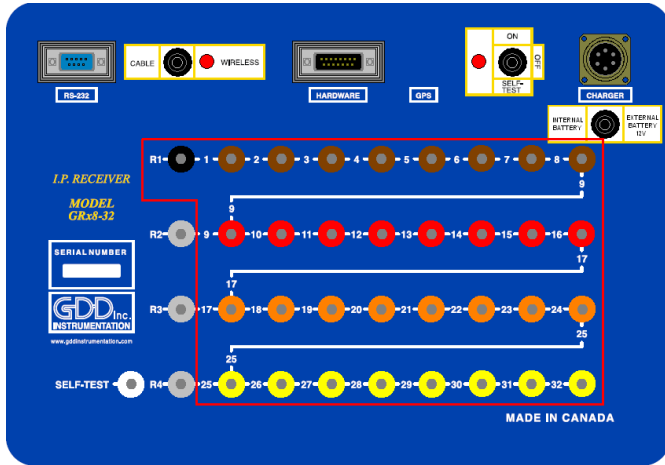
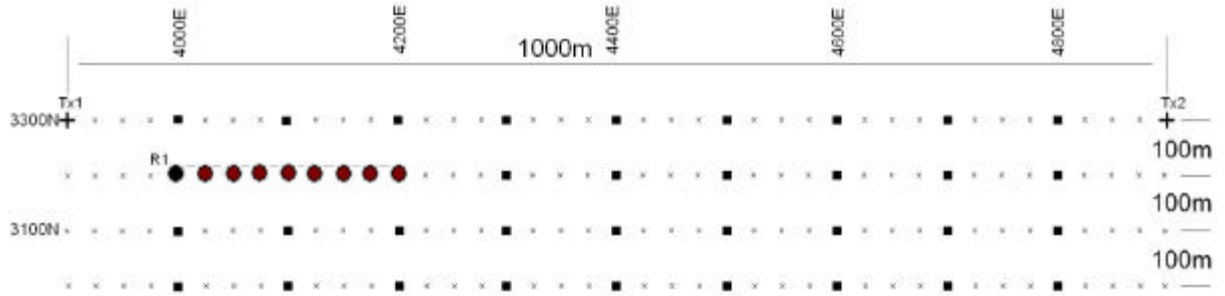
3) If all the values are correct, click the Ok button to continue and take a reading. If something is incorrect, you can modify it on this page.

LTx	3300	1	3975	5	4075
LRx	3300	2	4000	6	4100
Tx1	3900	3	4025	7	4125
Tx2	3925	4	4050	8	4150
Ref	3950	>>>> Page 2			

4) When the reading is done, click the NEXT STN button to increment the positions.

LTx	3300	1	4000	5	4100
LRx	3300	2	4025	6	4125
Tx1	3925	3	4050	7	4150
Tx2	3950	4	4075	8	4175
Ref	3975	>>>> Page 2			

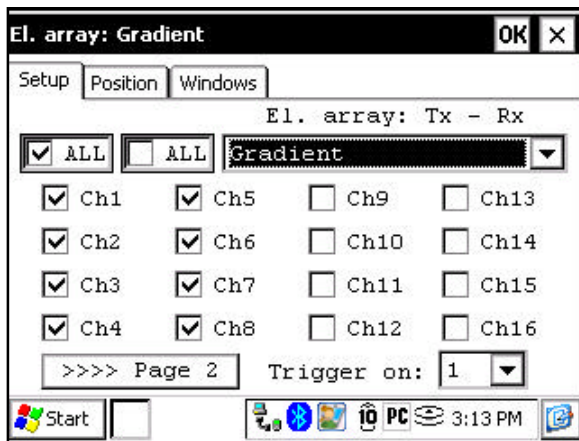
Gradient



- Legend
- x Station
 - + Tx electrode
 - Rx electrode
 - R1 Reference electrode

For this Gradient setup, 8 electrodes of the GDD-Rx will be used.

1) Select Gradient in the setup page.



- 2) Enter the positions corresponding to your survey parameters.

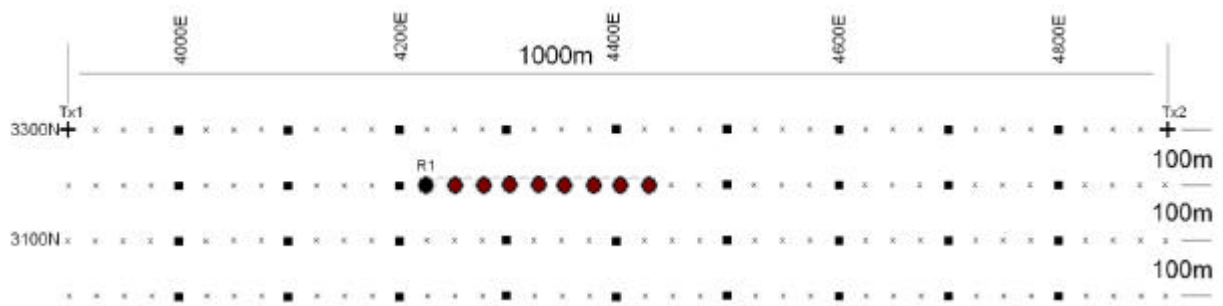
- 3) If all the values are correct, click the Ok button to continue and take a reading. If something is incorrect, you can modify it on this page. Uncheck the Tx box so only the Receiver electrodes position will change.

LTx	3300	1	4025	5	4125
LRx	3200	2	4050	6	4150
Tx1	3900	3	4075	7	4175
Tx2	4900	4	4100	8	4200
Ref	4000	>>>> Page 2			

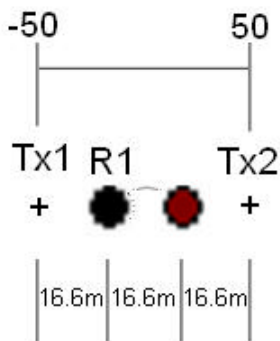
- 4) When the reading is done, make sure that the Tx box is unchecked, click the NEXT STN button to increment the positions, only the Receiver electrodes position will change.

LTx	3300	1	4250	5	4350
LRx	3200	2	4275	6	4375
Tx1	3900	3	4300	7	4400
Tx2	4900	4	4325	8	4425
Ref	4225	>>>> Page 2			

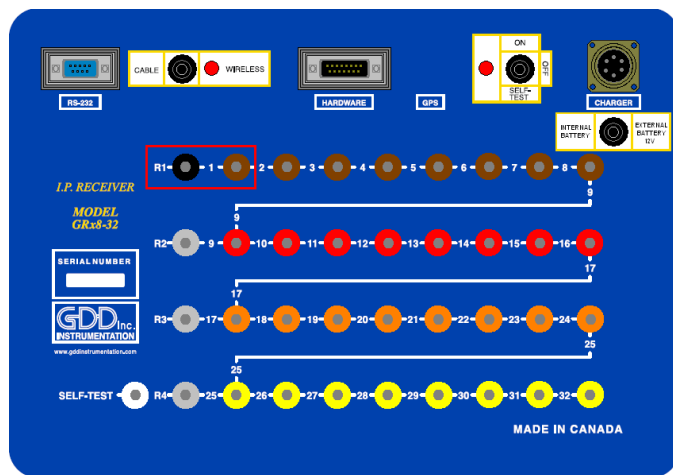
5) Your next setup on the field should be like this.



Wenner

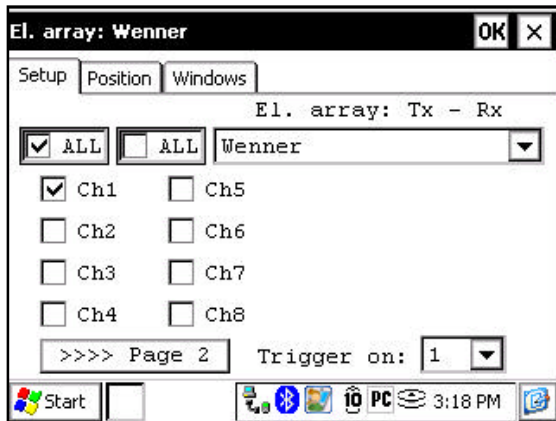


- Legend
- x Station
 - + Tx electrode
 - Rx electrode
 - R1 Reference electrode

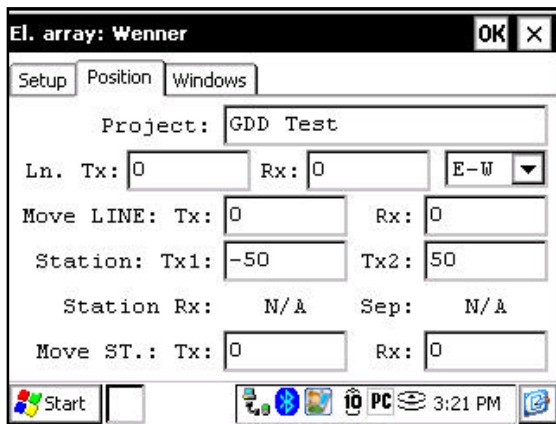


A Wenner setup uses only two electrodes, the Reference R1 and the electrode 1 of the GDD Rx.

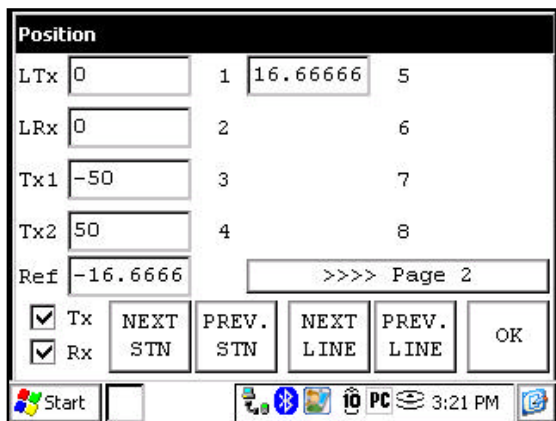
1) Select Wenner in the setup page and check only one channel.



2) Enter the positions corresponding to your survey parameters.

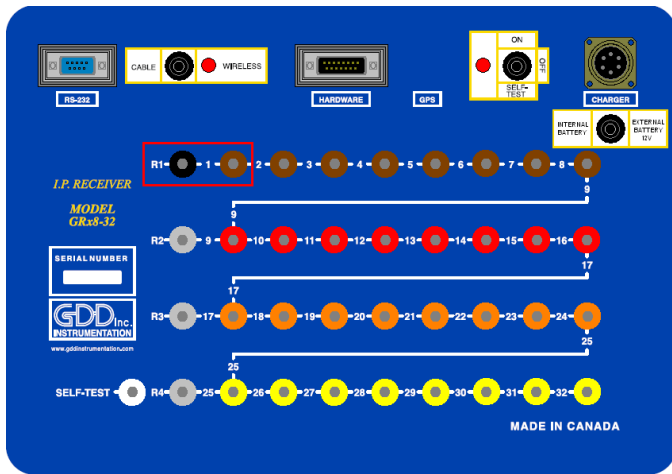
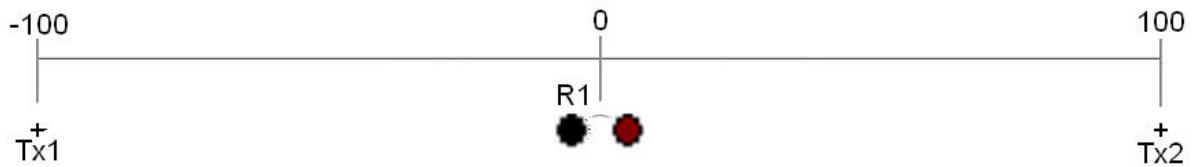


3) If all the values are correct, click the Ok button to continue and take a reading. If something is incorrect, you can modify it on this page.



- 4) For a Wenner survey, you will have to manually enter the parameters for each reading. To access the Position page, click the Tools button and select the Config option in the pop-up menu.

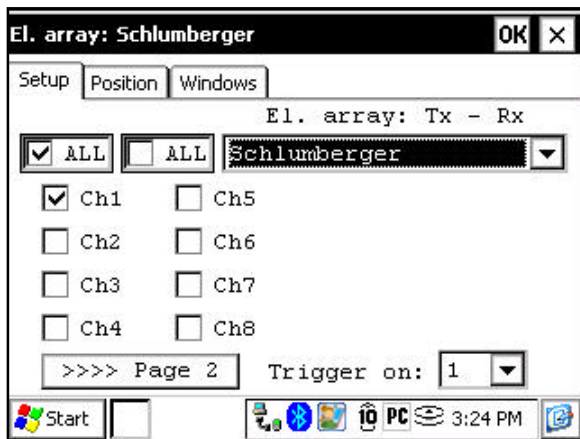
Schlumberger



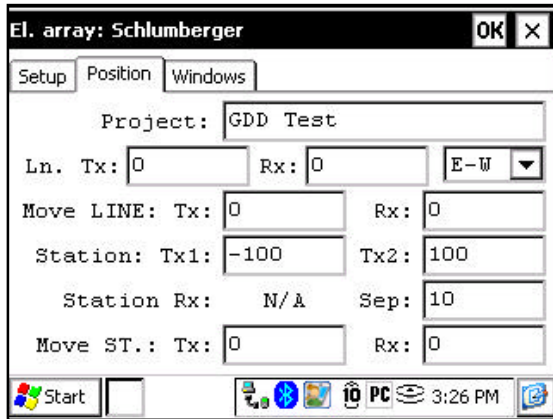
- Legend
- x Station
 - + Tx electrode
 - Rx electrode
 - R1 Reference electrode

A Schlumberger setup uses only the Reference R1 and the electrode 1 of the GDD Rx.

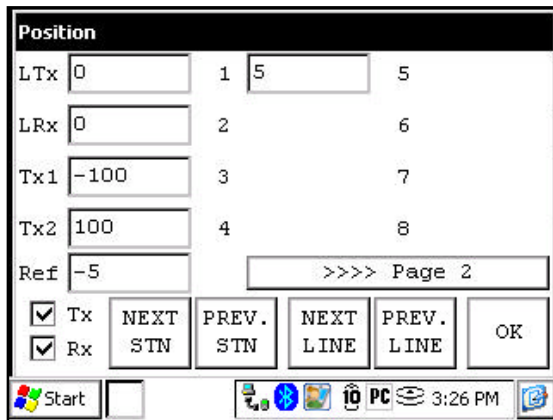
- 1) Select Schlumberger in the setup page.



2) Enter the positions corresponding to your survey parameters.

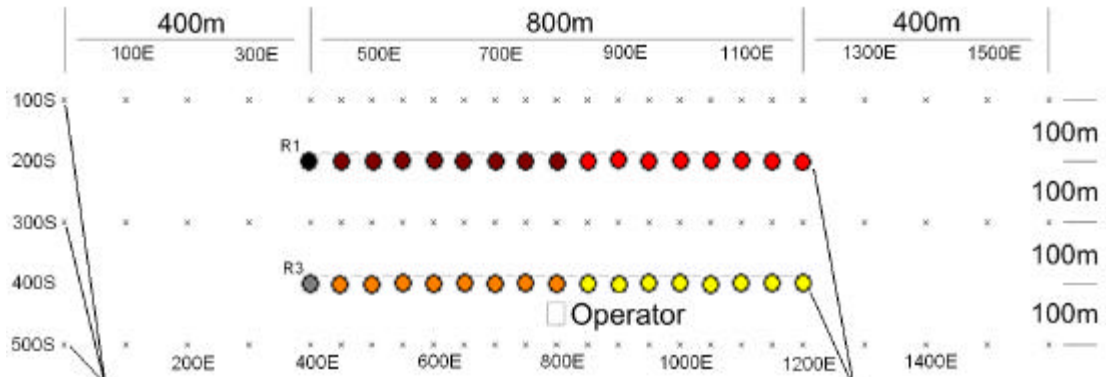


3) If all the values are correct, click the Ok button to continue and take a reading. If something is incorrect, you can modify it on this page.



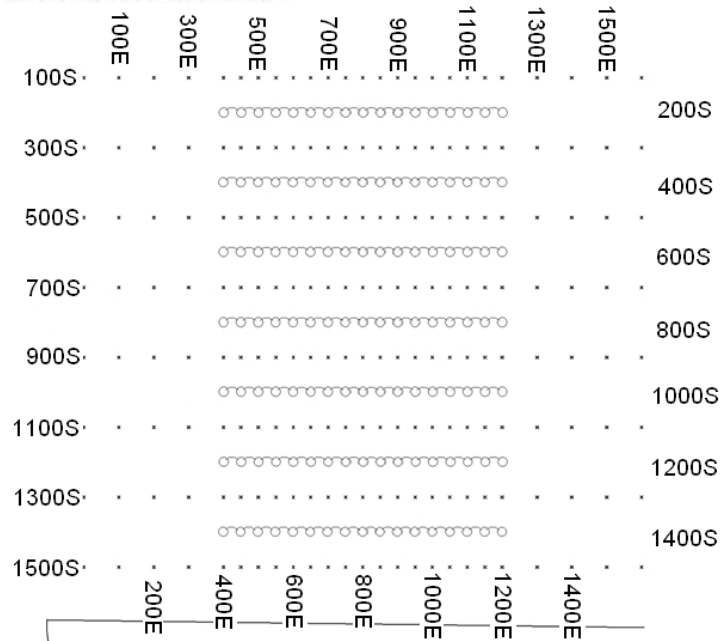
4) For a Schlumberger survey, you will have to manually enter the parameters for each reading. To access the Position page, click the Tools button and select the Config option in the pop-up menu.

3D Survey



Transmitter pole electrodes
 3 lines of electrodes
 100m either side of the receiver line
 17 electrodes plus 4 at each end
 =25 per line x 3 lines
 =75 transmitter pole electrodes

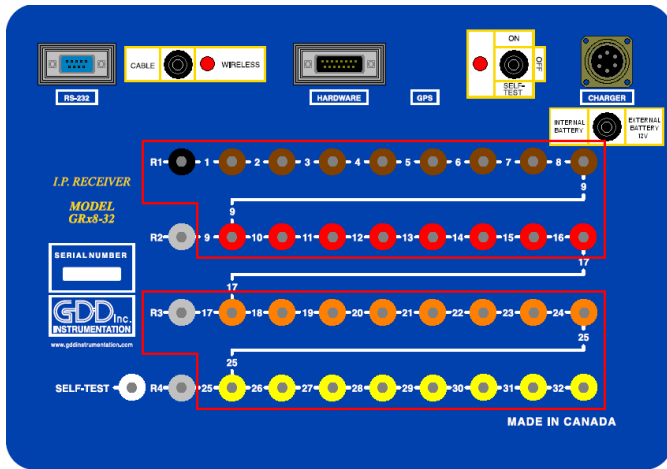
Receiver electrodes
 2 lines
 17 electrodes per line
 16 dipoles per line
 Fixed location



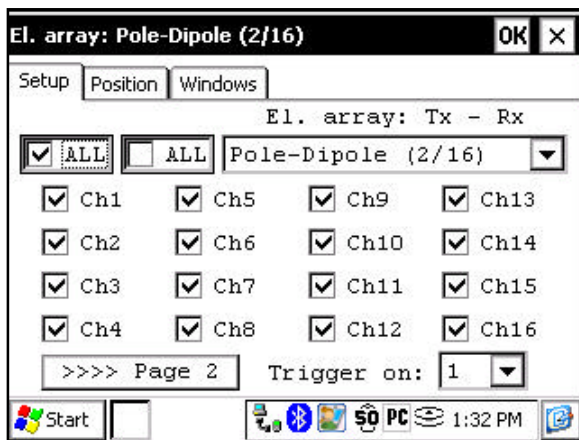
Wire from remote electrode

Remote electrode
 at least 2km distant
 Preferably in standing
 water (such as a dam).

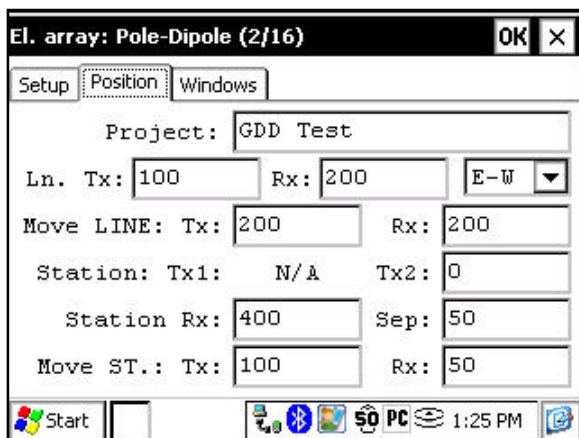
As shown on the images on the previous page, this setup is for 2 lines of 16 dipoles each using a GDD Rx -32. For the reference pins, R1 and R3 will be used; R2 and R4 will not be used since this is a 2 lines setup.



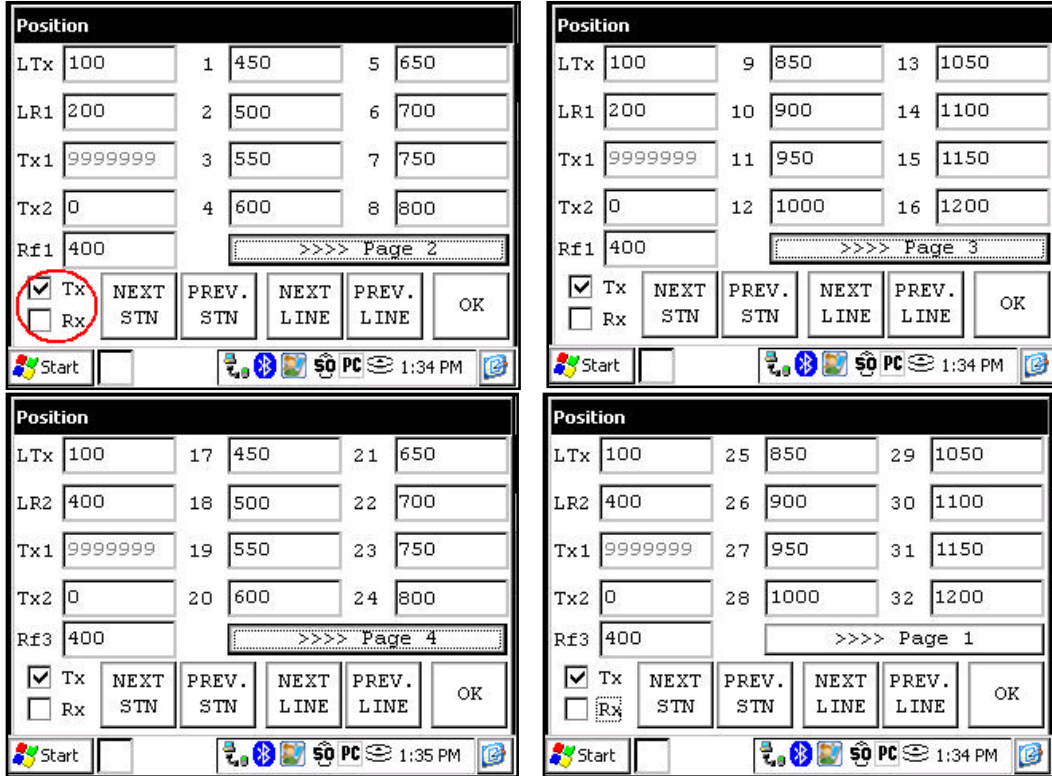
1) Select the Pole-Dipole 2/16 on the Setup tab.



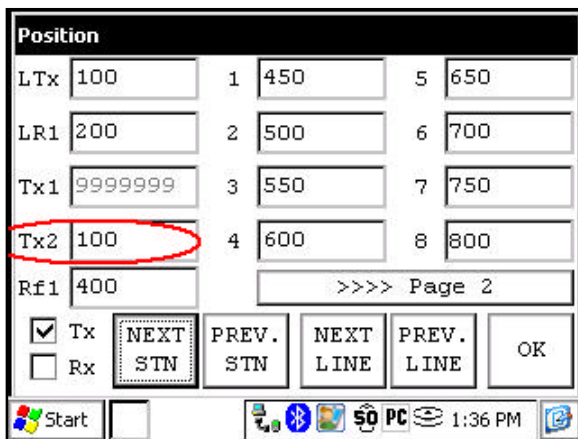
2) On the Position tab; enter the parameters of your survey.



- 3) Uncheck the Rx box so only the Tx position will change when you click the NEXT STN and NEXT LINE buttons. Verify that the positions of the 32 electrodes are set properly. Hit the OK button to close this window. On the next screen, click Start to take readings.



- 4) When readings are done and stored, click the Start button. Click the NEXT STN button and only the Tx2 station will be incremented by 100 since it was entered as the Tx spacing.



- 5) When Tx2 station position is 400, you will have to modify the spacing from 100 to 50. Select Tools -> Config and the next screen will appear. Select the Position tab and change the Move St.: TX: to 50.

El. array: Pole-Dipole (2/16) OK X

Setup Position Windows

Project: GDD Test

Ln. Tx: 100 Rx: 200 E-W

Move LINE: Tx: 200 Rx: 200

Station: Tx1: N/A Tx2: 400

Station Rx: 400 Sep: 25

Move ST.: Tx: 50 Rx: 25

Start [Taskbar icons] 1:39 PM

- 6) Continue the survey. When Tx2 station position is 1200, you have to change the spacing back to 100.

El. array: Pole-Dipole (2/16) OK X

Setup Position Windows

Project: GDD Test

Ln. Tx: 100 Rx: 200 E-W

Move LINE: Tx: 200 Rx: 200

Station: Tx1: N/A Tx2: 1200

Station Rx: 400 Sep: 50

Move ST.: Tx: 100 Rx: 50

Start [Taskbar icons] 1:40 PM

- 7) When the line is completed press NEXT LINE to increment the LTx.

Position

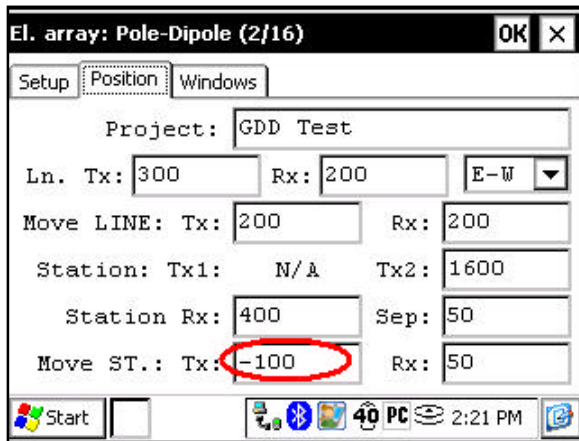
LTx	300	1	450	5	650
LR1	200	2	500	6	700
Tx1	9999999	3	550	7	750
Tx2	1600	4	600	8	800
Rf1	400	>>>> Page 2			

Tx Rx

NEXT STN PREV. STN NEXT LINE PREV. LINE OK

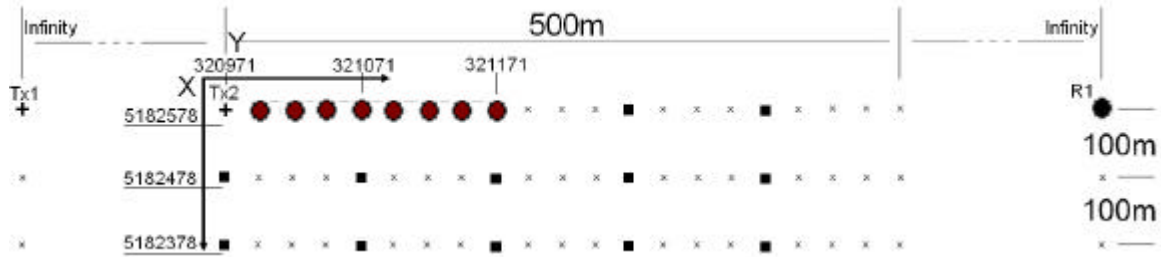
Start [Taskbar icons] 1:41 PM

- 8) When the line is done, change the Move ST.: TX: to -100 or the Tx2 position to 0 depending on where you are starting the next line.

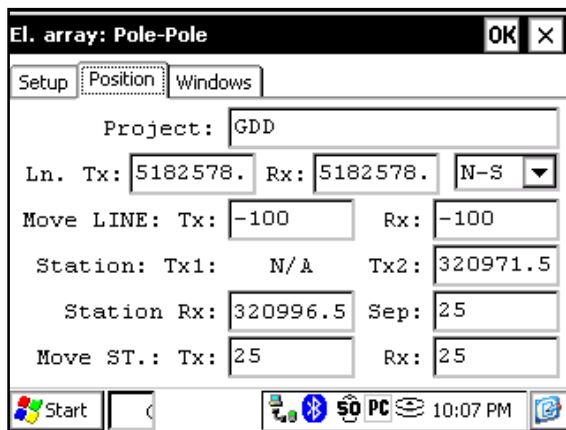


GPS Positions

Setting GPS positions instead of nominal positions

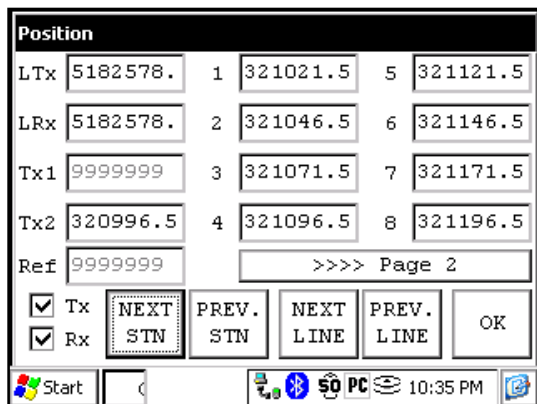


Starting position: X – 320971.52 Easting Y – 5182578.35 Northing



Instead of using a relative position system (the starting position being 0,0), you can enter GPS position in meters in the Line TX, Line RX, Tx1, Tx2 and Station Rx cases. You can enter any number between -9999999 and 9999999.

Next Station



Next Line

