# **IP RECEIVER**

# New features GDD Rx program

Version 5.3







1963 rue Frank-Carrel, suite 203 Québec (QC), Canada, G1N 2E6 Tel.: +1 (418) 478-5469

E-Mail: info@gddinstruments.com Web site: www.gddinstruments.com

### **PseudoSection**

A new Pseudosection option is used to display the calculated pseudosection (in color) for each surveyed line.

1. Select Tools | Show | Show Pseudosection Hotkey 'U'



2. The following screen appears.



Note: Use the hotkey 'I' to invert the Pseudo colors.

3. Color bar editing.

Click on the "Config" button in the pseudosection main screen.



The following screen appears.

	월 GDD Rx - !!! NO RECEIVER !!!	<b>,∷‡                                    </b>	Entora
Unclick the automatic	Automatically compute	limits	maximum
	Maximum value	000000	Fotor a
	Minimum value 0.0	000000	minimum value
	Note : Press ENTER wh	en finished	

To validate and go back to the pseudosections view, you can either click on « Enter » or on the « OK » button.

4. To visualize the whole pseudosection, use the arrows on the PDA keyboard:



### **Next/Previous Station hotkeys**

<b>~</b>	GDD Rx - 32 (		' <b>4</b> € 1:03 ok					
LTx	400	1	900	)	5	1300		
LRx	600	2	2 1000		6	1400		
Tx1	9999999	з	110	00	7	1500		
Tx2	400	4 1200		8	1600			
Ref	99999999			>>>>	≻ Paq	ge 2		
<ul> <li>✓ Tx PREV NEXT PREV NEXT</li></ul>						KT F4		

Hotkeys have been assigned to *Prev* and *Next* buttons (F1 to F4).

#### Note that the positions of the Prev and Next buttons have been changed too.

To exit this window, use one of the *OK* buttons on the screen or use *ESC* keystroke to cancel and keep the same settings than before or *Enter* keystroke to confirm your settings.

If *F1* to *F5* buttons do not work on your Allegro Mx, go to *Start Menu | Settings | Buttons | FKey* and enable *F* buttons.



### Acquisition start-up process

Here is the new configuration for the Start-up process with Allegro Mx or Allegro<sup>2</sup>:

1) Click Start or use Enter keystroke

	DD Rx - 32 ch		€ 1:05	ok						
Ln:	600 N-	S	TOOLS	STA	RT					
Tx:	400 Rx	: 900								
Coun	t: 74	£00	v:	-32.8	mV					
MEM:	19 B: 44.	4% Stack:	5 I: 10	000.0						
CH	Rho	Vp	М	ErrM						
01	423.41	125.129	7.902	0.043	-					
02	995.23	250.429	7.939	0.013	=					
03	1716.70	375.271	7.955	0.010						
04	2591.33	500.095	7.935	0.008						
05	3628.46	626.315	7.942	0.005	•					

3) Click OK or use ESC keystroke



2) Click OK or use Enter keystroke



4) Click NEXT or use Enter keystroke

	DD Rx - 3	32 channels		• € 1:02	ak				
Ln:	60	⊃N-S	TOOLS	NEX	т				
Tx:	40	D Rx: 900							
Count	::	14900	V:	12.4	mV				
MEM:	19	BAT	TERY: 42.8	*					
Stati	on (m)	): Contac	t (kOhm)		-				
	900:	8.7	1000:	14.9	=				
	1100:	18.3	1200:	19.3					
	1300:	18.6	1400:	14.9					
	1500:	8.5	1600:	0.0	-				

5) Click OK or use Enter keystroke



All buttons in the different windows are now in the upper right corner. The keystrokes used to start acquisition are:

Enter, Enter, ESC, Enter et Enter

With Allegro Cx, there is a difference for the first window: with the keyboard you have to press on *Tab* keystroke until the *Start* button is highlighted. Then, press on *Enter* keystroke to begin the acquisition process.

### Negative value in Vp graph

The negative Vp values will be displayed in blue in the same graph. The height of the bars still indicates the absolute value of the Vp and the color indicates de sign (green for positive values and blue for negative values).



### Acquisition Quick Start

It is now possible to start the acquisition process with the same settings by using *F5* keystroke. You have to start the first acquisition normally before being able to use *F5* for the next acquisitions. Using *F5* will skip all configuration and contact resistance windows.

Press on *M* keystroke to see Hotkeys.

월 GDD Rx - 32 channels	# ◀€ 1:13	ok
Action	Кеу	
Hotkeys:	"M"	
Quick start (Repeat reading)	: "F5"	₽
Show Signal: Show Contact and Noise:	"S" "N"	
Show Vp and Cycle:	"C"	
Show M and ErrM:	"R"	
Show Decay: Show Windows (1-8 ch):	"D"	
Show Windows (9-16 ch):	"2"	-

If *F1* to *F5* buttons do not work on your Allegro Mx, go to *Start Menu* | *Settings* | *Buttons* | *FKey* and enable *F* buttons.



### **Comparing Data**

In the readings window, you can now move between your readings by using left and right arrow keys.

Once your acquisition process is finished, use the left arrow keystroke to compare your current data with those of your previous acquisitions. Use Up and Down arrows to see all channels.

y G	DD Rx - 32 chann	els		<b>(</b> € 1:39 o	🐴 GDI	) Rx - 32 channels	ŧ	•
Ln: Tx: Coun	600 N-S 400 Rx: 9 t: 109300	00	TOOLS V:	START 471.2 m <sup>3</sup>	Ln: Tx: Count	600 N-S 400 Rx: 900 : 110000	TOOLS V:	
MEM: CH	19 B: 41.1% Rho	Stack: Vp	5 I: 10 M	000.0 ErrM	MEM: 1 CH	.8 B: 40.9% Stac Rho V	k: 5 I: 1 p M	. C
01 02 03	425.17 1 999.43 2 1723.58 3	25.651 51.486 76.776	8.214 8.156 8.171	0.036	01 425 02 86 03 145	735.54 125.81 251.63 21.70 2013.03 32.13	7 8.120 4 30.045 7 20.978	
04 05	2602.36 5 3642.66 6	02.223 28.767	8.162 8.155	0.015	04 240 05 357	0009.63 46.31 762.77 61.75	9 18.143 4 89.676	;

If you have to see data from an acquisition that is not close to the current one, use Display Readings option to select the acquisition you want to see.

🏂 GDD Rx - 32	# ◀€ 1:39	ok	
	Reading Number	:	
	2		
	CONFIRM		
	CANCEL		

You can start again your acquisition process by clicking on *Start*. The program will automatically come back to the last acquisition.

🐴 GDD Rx - 32 cha	## ·	€ 1:43	ok	
Ln: 600 N-S	;	TOOLS	NEX	т
Tx: 400 Rx:	900			
Count: 1223	00	V:	107.3	mV
MEM: 20 BATTERY: 39.8%				
Station (m): Co	ontact (k	:Ohm)		-
900: 8	3.6 1	.000:	14.8	=
> 1100: 18	3.3 1	200:		
1300:	1	400:		
1500:	1	.600:		-

### Scrolling up and down through decays

Unfortunately, because of how the Microsoft system is configured, we cannot get the same process with the Allegro Mx or the Allegro<sup>2</sup> than one we have with the Allegro Cx. But we added the possibility to use *Enter* keystroke to go to the channel field.

🏂 GDI	D R	tx - 32 channels 🛛 👫 📢 1:44	ok				
8.000 J +++++++++++++++++++++++++++++++++							
Channe	≥1						
4	-						
4							
5	F						
6	≡						
7							
0							
10			$\perp$				
11	-						

Once the decay field is opened you can use Up and Down arrow keys to select the channel.

鸄 GD	DF	Rx - 32 channels 💦 👫 ┥€ 1:44	ok			
8.000 ך <del>*****</del> ן						
Channe	≥1					
7	-					
4	-					
5						
6	=					
7						
8						
9						
10		1	-			
11	•					

### **GDD – Special processing options**

This option allows you to disable the default gain and offset settings.

🐉 GDD Rx - 32 channels	🗱 📢 11:28 🛛 🐟	🎥 GDD Rx - 32 channels 🛛 👫 📢 11:29 💽
Ln: 600 N-S Tx: 400 Rx: 900 Count: 300 M Reinit Signal processing options	TOOLS START Config Special Show Raw Data Memory About	Internal offset OFF         Input signal offset OFF         Input signal gain OFF         Input signal telluric OFF         CONFIRM         CANCEL

Note that the gains and offsets are enabled every time you start the program even if you disabled them the last time you used it.

### New electrode arrays configuration

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

\*For the new GRx8*mini* model only.

#### **Signal timing**

Signal timing available now: 0.5, 1, 2, 4, 8 and 16 seconds.

🐉 GDD Rx - 16 channel	<b>₩ 4</b> € 4:29	ok	
Stop Cycle:	10	•	-
Timing: Mode:	2 sec 0.5 sec 1 sec		=
Delay (ms): 2 80,80,80, 80,80,80, 80,80,80,	2 sec 4 sec 8 sec 16 sec	ns):	•
Setup Position Windows			





### **GPS time**

There is a new file format with *.gps* extension. The data in this file are the same than those of the *.gdd* file except for the GPS timestamp.

Example	of .g	<i>ps</i> file
---------	-------	----------------

Ver	sion PPC:	0.4.2.39 Ver	sion Rx:	8.1	.0.0 RX 5	N: 1266							
Wir	dows: 20	Setting: Arit	h. Delay	( (ms	): 240 Ti	ming (ms):	80, 80,	80,	80, 80, 80,	80, 80,	80, 80, 8	0, 80, 80,	80, 80, 8
Μ	em Date	Hour	and the second second	GPS	SyncBy	Array	LineTx		LineRx Dir	n	Tx1	Tx2	Rx1
	1 27/08/	2015 15:00:07	.049443	YES	SIGNAL	DP-DP	100.00		100.00 N-5	1.0	25.00	50.00	75.00
	1 27/08/	2015 15:00:07	.049443	YES	SIGNAL	DP-DP	100.00		100.00 N-5	2.0	25.00	50.00	100.00
	1 27/08/	2015 15:00:07	.049443	YES	SIGNAL	DP-DP	100.00		100.00 N-5	3.0	25.00	50.00	125.00
	1 27/08/	2015 15:00:07	.049443	YES	SIGNAL	DP-DP	100.00		100.00 N-5	4.0	25.00	50.00	150.00
	1 27/08/	2015 15:00:07	.049443	YES	SIGNAL	DP-DP	100.00		100.00 N-5	5.0	25.00	50.00	175.00
	1 27/08/	2015 15:00:07	.049443	YES	SIGNAL	DP-DP	100.00		100.00 N-5	6.0	25.00	50.00	200.00
	1 27/08/	2015 15:00:07	.049443	YES	SIGNAL	DP-DP	100.00		100.00 N-5	7.0	25.00	50.00	225.00
	1 27/08/	2015 15:00:07	.049443	YES	SIGNAL	DP-DP	100.00		100.00 N-5	8.0	25.00	50.00	250.00
	2 27/08/	2015 15:03:47	.001726	YES	SIGNAL	DP-DP	100.00		100.00 N-5	1.0	25.00	50.00	75.00

If there is GPS synchronization with a satellite, the column GPS will show YES as shown on the picture above. See *Section GPS time synchronization* at the end of this document for more details about *SyncBy* column.

If the GPS synchronization with a satellite is lost, the synchronization will be kept for 5 hours (holdover). In that case, the Date and Hour will continue to increase following the GPS time but the GPS column will show NO as shown on the picture below.

\ F	/ersion PPC: 0.4	.2.39 Vers	ion Rx:	8.1	.0.0 RX	SN: 1266										
ķ	indows: 20 Sett	ing: Arith	. Delay	(ms	240	Timing (ms):	80, 80,	80,	80, 80, 80,	80,	80,	80, 80	, 80	80,	80,	80, 80,
ſ	Mem Date	Hour		GPS	SyncBy	Array	LineTx		LineRx Dir	'n		Tx1		Tx2		Rx1
L	1 28/08/2015	17:03:35.	592977	NO	SIGNAL	P-P	100.00		100.00 N-5	0.0	999	99999.0	00	50.	00	75.
L	1 28/08/2015	17:03:35.	592977	NO	SIGNAL	P-P	100.00		100.00 N-5	0.0	999	99999.0	00	50.	00	100.
L	2 28/08/2015	17:04:31.	580638	NO	SIGNAL	DP-DP	100.00		100.00 N-5	1.0	999	99999.(	00	50.	00	75.
L	2 28/08/2015	17:04:31.	580638	NO	SIGNAL	DP-DP	100.00		100.00 N-5	2.0	999	99999. (	00	50.	00	100.
L	3 28/08/2015	17:05:31.	578131	NO	SIGNAL	DP-DP	100.00		100.00 N-5	1.0	999	99999. (	00	50.	00	75.
Ľ	3 28/08/2015	17:05:31.	578131	NO	STGNAL	DP-DP	100.00		100.00 N-5	2.0	990	99999. (	00	50.	00	100.

If there is no GPS synchronization with a satellite from the beginning or if the GPS signal is lost for more than 5 hours, the Date and Hour will be replaced by *NO GPS TIME*.

V	ersion	PPC: 0.4.2.39 Verst Project	ion Rx: 8.1	.0.0 RX	SN: 1266													
W	indows	: 20 Setting: Arith.	Delay (ms)	). 240	Timing (ms):	80, 80,	80,	80, 80	80,	80,	80, 80,	80,	80,	80,	80,	80,	80,	1
	Mem	Date Hour	GPS	SyncBy	Array	LineTx		LineRx	Dir	n	TX	1		Tx2		R	tx1	
	1	NO GPS TIME	NO	SIGNAL	DP-DP	100.00		100.00	N-S	1.0	999999	9.00		50.	00		75.	00
	1	NO GPS TIME	NO	SIGNAL	DP-DP	100.00		100.00	N-S	2.0	999999	9.00		50.	00	1	.00.	00
	2	NO GPS TIME	NO	SIGNAL	P-P	100.00		100.00	N-5	0.0	999999	9.00		50.	00		75.	00
	2	NO GPS TIME	NO	SIGNAL	P-P	100.00		100.00	N-S	0.0	999999	9.00		50.	00	1	.00.	0
	3	NO GPS TIME	NO	SIGNAL	DP-DP	100.00		100.00	N-S	1.0	999999	9.00		50.	00		75.	0
Ľ	3	NO GPS TIME	NO	STANAL	DP-DP	100.00	8	100.00	N-5	2.0	9999999	9.00	8	50.	00	1	00.	00

The GPS timestamps will also appear in the fullwave file or in the binary raw data file.

	Exam	ble	of	а	fullwave	file
--	------	-----	----	---	----------	------

	Version PPC: 0.4.2.39 \	/ersion Rx:	8.1.0.0 R	( SN: 1266				
	Project: Project							
	Windows: 20 Setting: Ar	ith. Delay	(ms): 240	Timing (ms):	80, 80, 80,	80, 80, 80,	80, 80, 80	. 80. 80. 8
	MEM: 1 FULL WAVE: 8 cha	annel(s) 27	/08/2015 15	5:00:07 (Time	GPS) ARRAY:	DP-DP LINE	TX: 100.00 M	N-S LINE RX
1	Time GPS	GPS	CH01	CH02	CH03	CH04	CH05	CH06
ſ	27/08/2015 15:00:07.049	9443 YES	4402.110	4417.473	4446.574	4415.306	-4404.320	4367.173
L	27/08/2015 15:00:07.069	9458 YES	5594.123	5619.028	5625.894	5617.490	-5593.644	5572.307
L	27/08/2015 15:00:07.089	9446 YES	5917.275	5948.031	5945.424	5948.056	-5916.514	5904.229
L	27/08/2015 15:00:07.109	9414 YES	5992.098	6025.043	6020.204	6026.248	-5991.927	5982.474
L	27/08/2015 15:00:07.129	439 YES	6008.621	6041.841	6036.090	6042.971	-6007.934	5999.322
L	27/08/2015 15:00:07.149	438 YES	6011.757	6044.923	6039.294	6046.429	-6011.360	6002.895
L	27/08/2015 15:00:07.169	437 YES	6012.301	6045.485	6040.224	6046.776	-6011.911	6004.075
l	27/08/2015 15:00:07.189	437 YES	6012.851	6045.410	6040.478	6047.488	-6012.057	6004.236
	27 /00 /201 5 15.00.07 20/	176	CO1 7 004	COAE DOD	CO10 510	CO17 700	CO10 100	COO4 501

As for the .*gps* file, if there is no GPS synchronization or if the GPS signal is lost for more than 5 hours, the *Date* and *Hour* will be replaced by *NO GPS TIME* in the .*fullwave* and .*bdf* files.

Take note that for some reasons, such as weak signal areas, the GPS module will not be able to track and synchronize with a satellite.

During the acquisition process, the GPS status is available by selecting Tools | Raw Data | Check GPS:



#### **Battery type selector**

The battery type of the GRx8-32 receiver will be detected by the GDD Rx program if your GRx8-32 receiver has firmware version 2.5.8 (or newer versions). If your GRx8-32 receiver has firmware version 2.5.4 or earlier, the GDD Rx program cannot detect the battery type automatically and you have to select battery type in the TOOLS menu (in that case, the default setting would be Ni-CD). See Section 8.2.4 in the Instruction Manual for more details.

If the *Battery Type* menu is grey (disabled), it means that the battery type is detected by the GDD Rx program and you do not need to set it manually.



🐉 GDD Rx - !!! NO RECEIVER	! 🗹 🗱 📢 3:45 🧕	🐉   GDD Rx - !!! NO RECEIVER !!!	🗹 🗱 📢 3:46 🛛 ok
Ln: ON-S	TOOLS START	Ln: ON-S	TOOLS START
Count: 0	<u>C</u> onfig 0 m	Count: 0	<u>C</u> onfig 0 mV
M <u>R</u> einit <u>S</u> imulation Signal processing options <u>B</u> attery Type	Special Show American	M Reinit Simulation Signal processing options ✓ Li-Ion re ► NiCd	Special > Show > Raw Data > Memory > About
100			~

If you do not select the right battery type, the battery level shown in the GDD Rx program will be a little bit different than the real level.

### **GPS time synchronization**

Use the GPS time synchronization if you need to synchronize your receiver to your transmitter using GPS time.

#### Requirements :

- Your receiver must be equipped with an internal GPS module.
- Your Allegro PDA must have the Rx software version # 4.2.39 and your receiver must have Rx firmware # 0.2.5.9 (or newer versions).
- Your transmitter (itself or linked to another unit) must be synchronized with a GPS.
- 1. Refer to Section 7.4 to verify if a satellite is being tracked by the GPS module of your receiver.
- 2. Select Tools | Config | Synchronization. The following screen appears.

🐉   GDD Rx - 8 channel	s 🕂 <b>4</b> € 11:	10 ok	🐉 GDD Rx - 8 channels 🛛 🗱 📢 11:46	ok
Ln: 100 N-S Tx: 50 Rx: 75 Count: 32600	5 TOOLS S	TART .6 mV	Use GPS Time Synchronization	
MEM: 3 B: 46.0% S CH Rho	tack: Vp	rM	WARNING: Make sure that the Transmitter is also synchronized	d
01 19.64 12 02 78.61 25 03 176.86 37	5.011 <u>Raw Data ►</u> 50.207 <u>Memory ►</u> 25.313 About	11 ▲ 01 ≡	by GPS when enabling this option	n
04 314.14 49 05 98.23 12	9.965 7.952 0.0 5.072 7.956 0.0	01	Setup Position Windows Synchronization	

3. Check Use GPS Time Synchronization to enable the GPS synchronization.



IMPORTANT: Make sure that your transmitter is also synchronized by GPS before using this option.

# Note that the GPS synchronization is disabled every time you start the program even if you checked it the last time you used it.

- 4. Before starting your acquisition process, make sure your transmitter and your receiver are well synchronized :
  - Wait for about 15 minutes before taking your first reading to ensure that the GPS module of the receiver gets the real UTC GPS time.
  - If possible, compare the GPS time of your transmitter with the GPS time of your receiver. They must have exactly the same GPS time (see *Section 7.4* to know how to get the GPS time of the receiver).
- 5. During the acquisition process, you can verify if your receiver is still synchronized with GPS (see *Section 7.4* to know how to verify the GPS signal):

#### GPS well synchronized

If you checked *Use GPS Time synchronization* and if a GPS signal is detected, your receiver will be synchronized with GPS.



IMPORTANT: it does not confirm that your receiver is well synchronized with your transmitter. In the case that your transmitter and your receiver are not well synchronized together, your data could be erroneous.

#### GPS signal lost for less than 5 hours

If you checked *Use GPS Time synchronization* and if the GPS signal is lost for less than 5 hours, your receiver will still be synchronized with GPS using the internal GPS clock.



<u>No GPS signal from the beginning, GPS signal lost for more than 5 hours or Use GPS Time</u> <u>synchronization unchecked</u>

If your checked Use GPS Time synchronization and if there is no GPS signal or if it is lost for more than 5 hours, the receiver will automatically switch to synchronize with the ground signal.



Note that the data acquired with the GPS synchronization can be more accurate than those acquired with the ground signal, especially over noisy environment.

IMPORTANT: During the acquisition process, if all your Vp values are negative, you can switch the polarity of the current transmission at the transmitter (switch the wires at the HV block) and all de Vp will become positive.

6. The *.gps* output file indicates if the receiver is synchronized with signal or GPS (see *Section 7.5* to know how to create a *.gps* file).

Ve	rsid	on PPC	: 0.4.	2.39 Ver:	sion Rx	: 8.1	.0.0 RX 5N	: 1266												
Pr	ojeo	t: Pro	oject		120 gaza/		(10 -1 1													
W1	ndov	vs: 20	Sett	ing: User	Delay	(ms):	240 T1m1n	g (ms):	80, 80, 80,	80,	80, 1	80,	80, 80,	80,	80,	80,	80,	80,	80,	80, 8
1 2	Mem	Date	e	Hour		GPS	SyncBy	Array	LineTx	Li	neRx	Dir	n	1	Tx1		T	x2		Rx1
	1	27/08	/2015	19:25:25	753399	YES	SIGNAL	DP-DP	100.00	10	0.00	N-5	1.0		0.	00		50.00	)	75.
	1	27/08	/2015	19:25:25	753399	YES	SIGNAL	DP-DP	100.00	10	0.00	N-S	2.0		0.	00	22	50.00	)	100.
	2	27/08	/2015	19:29:44	.062906	YES	GPS	P-P	100.00	10	0.00	N-5	0.0	9999	999.	00	1	50.00	)	75.
	2	27/08	/2015	19:29:44	.062906	YES	GPS	P-P	100.00	10	0.00	N-S	0.0	9999	999.	00		50.00	)	100.

The *SyncBy* column indicates SIGNAL if the receiver is synchronized with the signal connected to the trigger channel and GPS if the receiver is synchronized with the GPS time.

IMPORTANT: Even if the file indicates that your receiver is synchronized with the GPS time, it does not confirm that your receiver is well synchronized with your transmitter. In the case that your transmitter and your receiver are not well synchronized together, your data could be erroneous.

### New .mem file for GDD IP Post Process software

When you save your files at the end of the acquisition (*Memory Option – Save File*), a new *.mem* file is automatically created. This new file has a specific format required to be used with the new GDD IP Post Process software. Contact GDD for more information about this new software.

GDD Gene	eric (.gdd)	
GDD GPS	Time (.gns)	
Geosoft	GDD Rx	ok arvey
Amira ( Prosys	Dump Completed into file \My Documents\080320162. d, \My Documents\080320162. em	gd

### Duty Cycle 100%

It is now possible to measure induced polarization in the ON time using the Duty Cycle parameter (100%).



This parameter appears in the .gdd and .gps files.

			$\frown$				
5vm(%)	M ErrM	In Time	DC Stack	M01	M02	MO3	M04
100	3.935 0.008	1000.000 2000	50 3	3.956	3.910	3.951	3.957
100	3.915 0.001	1000.000 2000	50 3	3.922	3.915	3.927	3.915
100	3.908 0.006	1000.000 2000	50 3	3.936	3.916	3.917	3.905
100	3.903 0.004	1000.000 2000	50 3	3.893	3.900	3.919	3.912
100	3.906 0.000	1000.000 2000	50 3	3.924	3.907	3.916	3.910
100	3.908 0.001	1000.000 2000	50 3	3.931	3.916	3.906	3.905
100	3.908 0.001	1000.000 2000	50 3	3.927	3.910	3.912	3.914

### Binary raw data file (.bdf)

The *.rdf* file has been replaced by a binary file with the extension *.bdf*. The function is still the same: recording raw data without any synchronization with a transmitter signal. This new binary file can be used to remove telluric noise from the data using the new GDD IP Post Process software. See Section 8.4.2 of the Instruction Manual to know how to record raw data. At the end of the process, you will be prompted to name and save your *.bdf* file.



#### Monitor and record Tx output current and Power at the PDA

When using the optional GDD-RTE communication boxes to collect live information broadcasted by the GDD IP Transmitter, model Tx4, the Tx current "I" and power "P" can be displayed alternatively in the Rx PDA main screen under the TOOLS



and STOP/START buttons. To switch from one information to the other, use the following shortcut Key: "V" or click on the text label directly on the screen.





When using the GDD-RTE communication boxes, an ascii file (gdd\_rte.log) will be created at the same location than your IP data. This gdd\_rte.log file contains the output current and power values broadcasted by the GDD IP Transmitter, model Tx4.

### Monitor Satellite Signal Strength

If the external GPS antenna is connected to the IP Receiver, the satellite signal strength can be monitored in the TOOLS \ Raw Data \ Check GPS menu



### Verification of the integrity of the last reading

When you save a reading, there is a lot of data (Fullwave) that has to be stored in the memory, so it takes few seconds to complete saving reading. If, while saving reading, you turn the PDA OFF or the PDA battery goes down or any problem occur making the PDA restart, the last reading might be corrupted.

To avoid this problem, first of all, wait until the following message confirms the completion of saving reading.



If, nevertheless, your memory file gets corrupted, the next time you launch the software you will be aware of that situation by the following message and the memory file will be fixed by truncating missing Fullwave data.



### **Different versions of output file format**

GDD Instrumentation constantly improves the GDD Rx software. Sometimes we need to add an additional parameter or change the format of an existing parameter in the output files (.gdd, .gps, .dat or .csv). To preserve compatibility with existing software that need legacy format you can choose version of the format to use while saving output files.



### "Show All Stations" function

When you watch Decay curve for the current reading (available from software version 4.2.46) or for a previous reading in Preview mode, you can choose option "Show All Stations". This way, you will see Decay curves of the same channel for all readings in the memory which has been taken at the same station (Tx and Rx positions) with the same parameters (Timing, Windows, etc.). This option allows you to compare the quality of different readings taken in the same conditions.



### Support "Multi Rx mode"

GDD Instrumentation has developed a new way to do a distributed IP survey with many IP receivers together. We call it "Multi Rx mode". Many GDD IP receivers of any type (GRx2, GRx8mini or GRx8-32) can be controlled remotely from a "Master" station (PC, laptop, Toughbook, etc.) by means of using a RF (radio frequency) communication box (communication device developed by GDD Instrumentation) connected to the PDA which serves the receiver. You can use one RF communication box to connect a GDD IP transmitter (model Tx4) to the RF network in order to have measurements of induced current sent automatically from transmitter to the Master station.

To learn more about "Multi Rx mode" see "Multi Rx mode user guide".

In order to support "Multi Rx mode", the format of output file (.gdd) has been modified. We've added a field in the header which shows the used mode (SingleRx or MultiRx). We've also added the "Rdng" column which contains a unique ID of the reading. This ID helps to synchronize the readings from different receivers with the Master station.

Project: testssim Mode:	SingleRx 🔰						
Windows: 20 Setting: Ar	Ich. Delay (ms):	240 Timing	(ms): 80, 80,	80, 80,	80, 80, 80,	80, 80,	80, 80, 80,
Version PPC: 5.0.0.0 Ve	rsion Rx: 0.0.1.0	) Rx SN: 175	9				
Mem Rdng Date	Hour Array	LineTx	LineRx Dir	n	Tx1	Tx2	Rx1
1 43 29/01/2019	12:02:07 DP-DP	0.00	0.00 N-S	2.0	-500.00	200.00	50.00
1 43 29/01/2019	12:02:07 DP-DP	0.00	0.00 N-S	1.0	-500.00	200.00	100.00
1 43 29/01/2019	12:02:07 DP-DP	0.00	0.00 N-S	0.0	-500.00	200.00	150.00
1 43 29/01/2019	12:02:07 DP-DP	0.00	0.00 N-S	0.0	-500.00	200.00	200.00
1 43 29/01/2019	12:02:07 DP-DP	0.00	0.00 N-S	1.0	-500.00	200.00	250.00
1 43 29/01/2019	12:02:07 DP-DP	0.00	0.00 N-S	2.0	-500.00	200.00	300.00
1 43 29/01/2019	12:02:07 DP-DP	0.00	0.00 N-S	3.0	-500.00	200.00	350.00
1 43 29/01/2019	12:02:07 DP-DP	0.00	0.00 N-S	4.0	-500.00	200.00	400.00
2 44 29/01/2019	12:03:47 DP-DP	0.00	0.00 N-S	1.0	-500.00	200.00	-400.00

### **Supporting up to 100 stacks**

Following the request of certain customers, the maximum number of stacks has been increased to 100.



### Save files progress bar

A progress bar while saving files has been added.



### **Battery Monitor**

Now you can see the battery status in the window that you can find in

#### **TOOLS->Show->Battery information**:



You can find here the information about the residual battery voltage (V), the current consumption (A) and the residual battery capacity (%). When the charger is plugged, the time to complete the charge is displayed.

GDD Rx - 8 chan	nels	*	\_x <b>4</b> × @	8:22
Battery Monitor				
Battery 1: Current: Voltage: Level:	-0.210A 14.333V 31%			
Battery 2: Current: Voltage: Level:	-0.032A 14.315V 28%			
			(	ок



This feature is available for the GRx2 model with the Firmware version 0.5.1.11 and later and for the GRx8mini model with the Firmware version 8.1.0.5 and later.

If the Firmware version of the unit does not support the feature, the following message is displayed in the Battery Monitor.

GDD Rx - 8 channels 🛛 🗱 🗱 🦕 🛠 🗰 8:22
Battery Monitor
Information not available.
С