MAG-IC 3D

User Manual

vM25
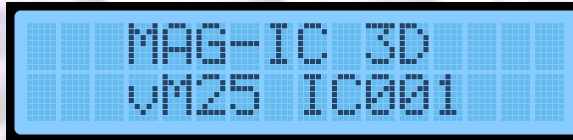
spare

spare

Startup – welcome screen
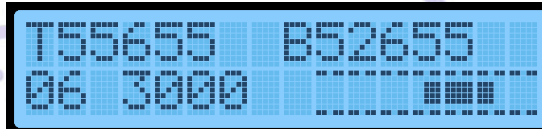
```
MAG-IC 3D
vM25 IC001
```

„MAG–IC 3D" – brand name

„vM25" – code version

„IC001" – serial number

Main screen – working screen

```
T55655   B52655
06 3000
```
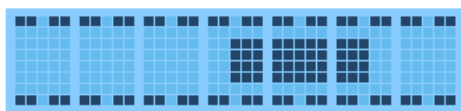
„T55655" – Top sensor value

„B52655" – Bottom sensor value

„06" – current number of samples in a column
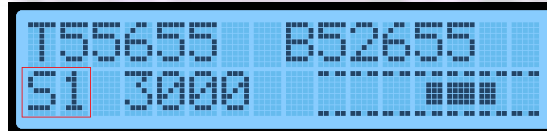
„3000" – difference between sensors

Bar scale display and meaning

negative anomaly **|** positive anomaly
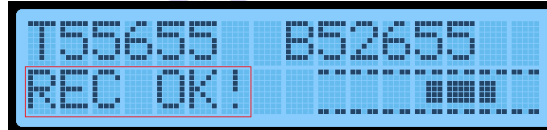
zero point

Key function in Main screen

Press on [←] key shortly displays „**Sx**"

```
T55655   B52655
S1  3000      ▮▮▮▮
```
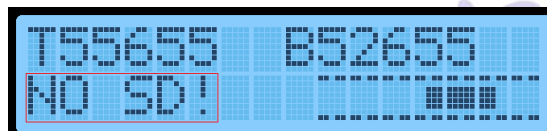
(where „**x**" is current value) and increase audio sensitivity by one. Minimum is „**S1**" and maximum is „**S9**". When sensitivity is at „**S9**"; on next press it returns back to „**S1**".

Press on [→] key store current sample values in file on SD card. If SD card is inserted and valid it will display:

```
T55655   B52655
REC OK!       ▮▮▮▮
```

If SD card is not present or corrupted; it will display:

```
T55655   B52655
NO SD!        ▮▮▮▮
```

Press on [↑] will tell the code to store following samples in next column and it will shortly display:
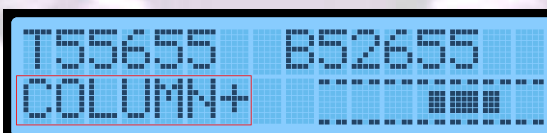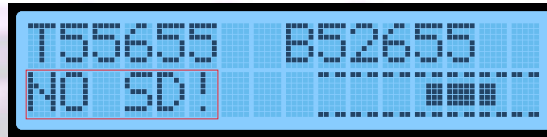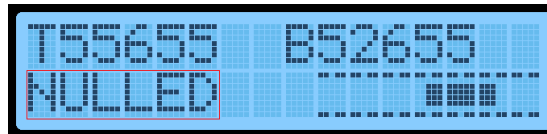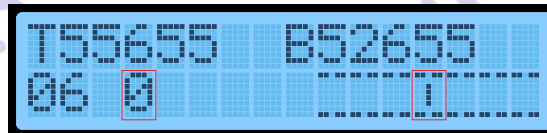
```
T55655   B52655
COLUMN+       ▮▮▮▮
```

If SD card is not present or corrupted; it will display:

```
T55655   B52655
NO SD!        ▄▄▄
```

Press on [↓] will shortly display:

```
T55655   B52655
NULLED        ▄▄▄
```

and than:

```
T55655   B52655
06  0         [ ]
```

This means that difference value (*between sensor values*) is „**NULLED**" and present relation between sensor values will be taken as „zero" for further readings. Bar scale display will act accordingly.

Press on **O** (*OK* or *Menu* button) will enter the **Menu mode**.

```
1. Help         <
2. SD Card
```
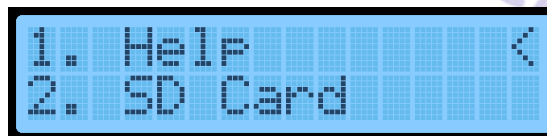
Symbol „<" points on item in Menu. To switch between the items (*choices, options*); scroll down or up by **pressing the**

[↑] **or** [↓] **buttons.**

```
1. Help
2. SD Card      <
```

```
2. SD Card
3. Audio Sense <
```

```
3. Audio Sense
4. Auto: OFF   <
```

To exit from **Menu**; press the [←] button.

1. Help

```
1. Help        <
2. SD Card
```

Press **O** and it will display:

```
BT Pass: 1234
Speed: 38400
```

BT Pass: 1234 – „1234" is BT pairing password.
Speed: 38400 – „38400" Baud rate for Bluetooth.
or
Speed: 9600 – „9600" Baud rate for Bluetooth.
    (depends on the BT module type and code version)

2. SD Card

```
1.  Help
2.  SD Card       <
```

Press ⭘ and it will display:

```
1.  Files         <
2.  Info
```

SD Card - Files submenu

```
1.  List          <
2.  New File
```

```
1.  List
2.  New File      <
```

```
2.  New File
3.  Delete All    <
```

Files submenu

    1. List - option, list files on SD card.

Press ⭘ and it will display:

```
1*DATA_001.ma93<
2 DATA_002.ma93d
```

Scroll down or up through the file list by pressing the

⬆ or ⬇ buttons.

Symbol „<" on the right side points on position in list.

To choose and manage the file; scroll **down** or **up** by pressing the ⬆ or ⬇ buttons to the file you want to mark and press ⭕ button. New submenu will display:

```
1. Select/Mark <
2. Send via BT
```

1. Select/Mark - will mark the file as "*active*".

```
2*DATA_002.mag3d<
```

This marks the file as "*active*" for storing the data.

To return back through menus; press the ⬅ button.

2. Send via BT - will send the file through BT when connection is established with pc computer.

1. **Files** submenu
2. **New File** - generate new file on SD card.

```
1. List
2. New File        <
```

Press ⭘ and it will display:

```
File added:
DATA_003.mag3d  <
```

1. **Files** submenu
3. **Delete all** - submenu

```
2. New File
3. Delete All     <
```

Press ⭘ and it will display:

```
1. Go Back        <
2. Delete All
```

You can go back by pressing ⭘ button, or press ⬇

```
1. Go Back
2. Delete All     <
```

and press again ⭘ **to delete all files from SD card**.

It will display:

```
Deleted!
```

and return to display:

```
2. New File
3. Delete All   <
```

To return back through menus; press the ← button.

SD Card - 2. Info

```
1. Files
2. Info         <
```

Press O and it will display:

```
1. Storage-MEM <
```

Press **O** again and it will shortly display:

```
Calculating...
```

and than something like:

```
Used/Free Space
0.31/127.13MB
```

(*old 128MB SD card example*)

To return back through menus; press the [←] button.

Menu - 3. Audio Sense
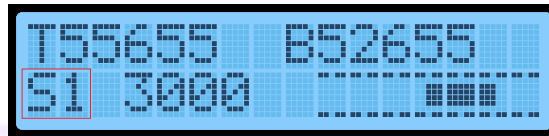
```
2. SD Card
3. Audio Sense <
```

Press **O** and it will display:

```
Up & Down to set
        350
```

Press the [↑] or [↓] button to set the audio threshold.
(*this value is than stored in eeprom*)

Audio treshold value is than multiplied with "**Sensitivity**" value, set on the main screen:
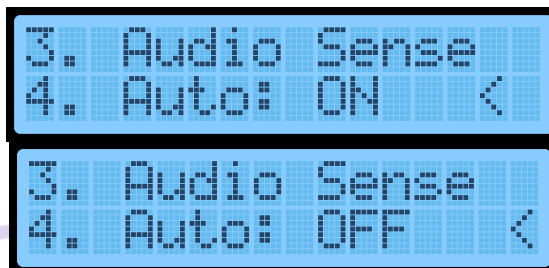
```
T55655   B52655
S1  3000   ┊┊┊┊┊▮▮▮▮
```

> **Notice**
> **Both settings affects only audio behavior.**

Menu - 4. Auto (sampling/recording mode)


```
3. Audio Sense
4. Auto: ON     <
```

```
3. Audio Sense
4. Auto: OFF    <
```

Press **O** to change from „ON" to „OFF" and vice versa. It sets the sampling mode to „automatic" or „manual". Automatic mode of taking data from sensors will start to take samples at each second, without need for operator to press the [→] button for each sample (record).

It will continue until next **press&hold** on [→] button again. To stop sampling (recording in this case), **press and hold for short** the [→] button, until audio apears, indicating the stopping of recording/sampling .

Next press on [→] button; it will continue with recording in the same column (*unless COLUMN+* [↑] *was pressed in meantime to switch to next column and place further samples/records in it*).

So, procedure for proper sampling/recording in „Auto" mode would be:
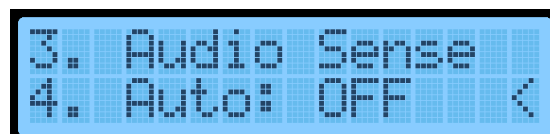
1) Stand on 1. row and 1. column on matrix.

2) Press [↓] button once to take the referent values („NULLED" appears shortly on LCD)

3) Press [→] to start sampling/recording.

4) Start walking the current column, trying to keep the one second pace at each sample.

5) At last row of current column *PRESS* and shortly *HOLD* the [→] button, **until hear the confirmation sound.**

6)
   a) In case of „zig-zag" scanning method (set in pc software); turn for 180 degress, step into next column (last row now) and manually rotate the sensor pipe for 180 degrees.

   b) In case of „parallel" scanning method (set in pc software); walk back and stand on first row of next column.

Repeat from „3)" till „6)" until the whole matrix finished.
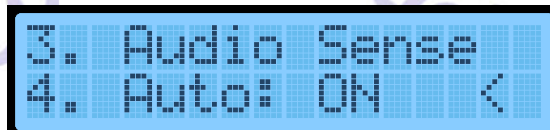
To switch off the „automatic" mode and put it in „manual mode", while in menu:

```
3. Audio Sense
4. Auto: ON     <
```

Press **O** button and it will set and show:

```
3. Audio Sense
4. Auto: OFF    <
```

indicating that device is set to „manual" recording mode.

Notice

By default, „automatic" mode is set to ON when powering the device for the first time.

MAG-IC 3D Windows PC software
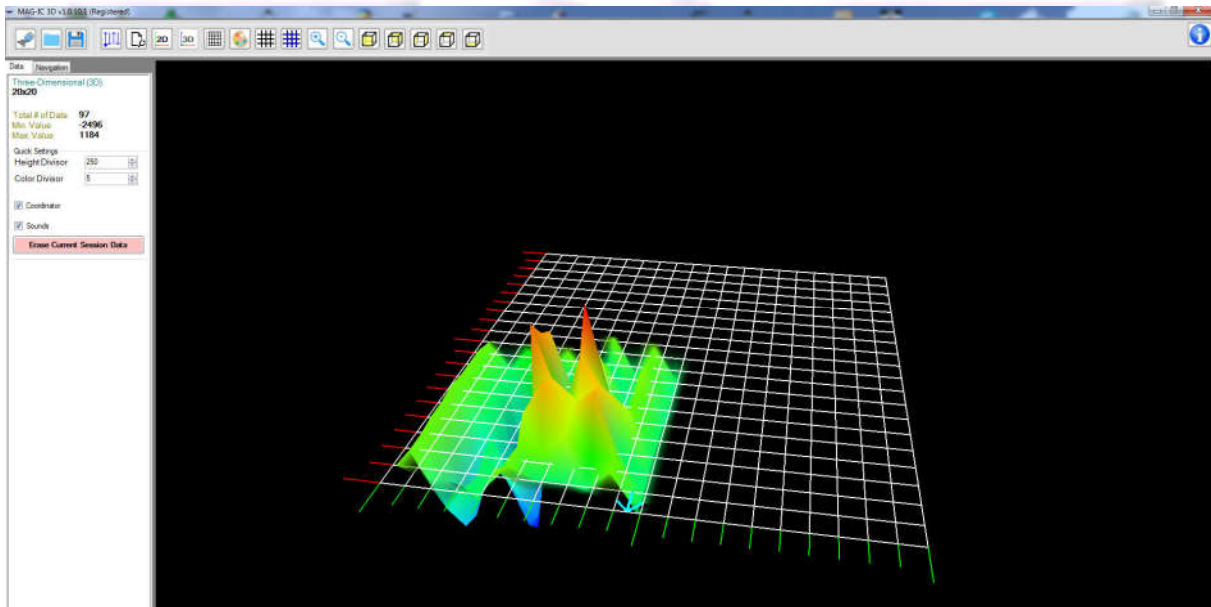
With MAG-IC 3D, you can view your terrain recordings in two-dimensional and three-dimensional graphic representations.

Load a recorded sample from a file or record it live by establishing communication between your device and the software.

The graph is simple and can be customized for better appearance of your preference.

Use the quick settings tab to adjust proper height of the 3D graph's peaks, color divisor, toggle coordination arrow and sounds
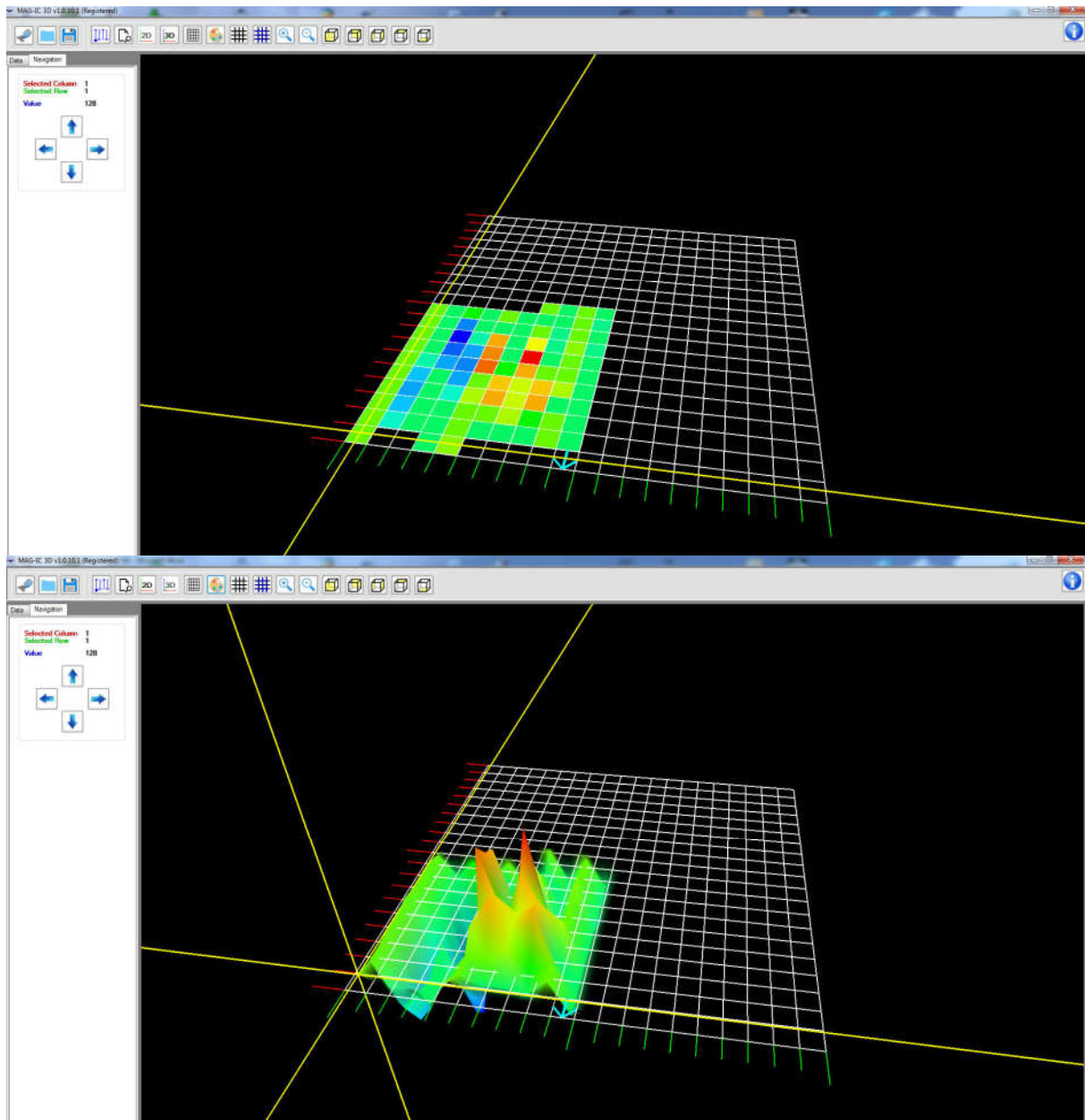
The Navigation tab lets you navigate through the graph and
view the data values of each cell.

Tool bar

This is the main tool bar.

 Serial Communication (Enter Live Mode)

This will open a window for listing available Ports and opening them which will allow your software to communicate with your Bluetooth module.
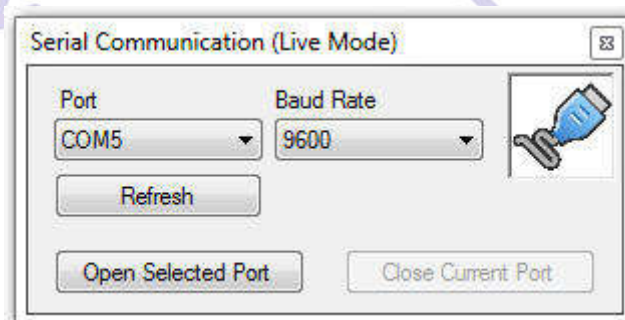
Choose the port of your Bluetooth device that you've connected to your computer from the dropdown list and Open it which will put the program in Live Mode from where you can start recording your device's data or transfer already recorded files from your device to pc software. After you're done, you can either Close it from here or just exit the program.

 Scanning method

This will open a window:
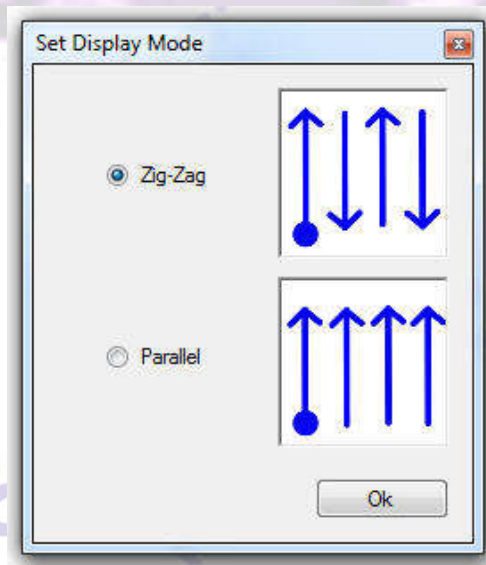
Offering you to choose between two scanning methods:
1) **Zig-Zag scanning method**
2) **Parallel scanning method**

It sets up the data organisation display on the working screen of the software.

"**Zig-Zag**" method means that after you finish recording the current column by pressing the ➔ button:
you will immediately step into next column, **turn for 180 degrees, manually rotate the sensor pipe for 180 degrees back** (to maintain the same pipe orientation as it was in last column) and than start recording the column by pressing the ➔ button.

ROWS ETC

RECORDING SEQUENCE:
C1/R1 START, RECORD TO C1/R9, END RECORD
C2/R9 START, RECORD TO C2/R1, END RECORD
C3/R1 START, RECORD TO C3/R9, END RECORD
ETC.
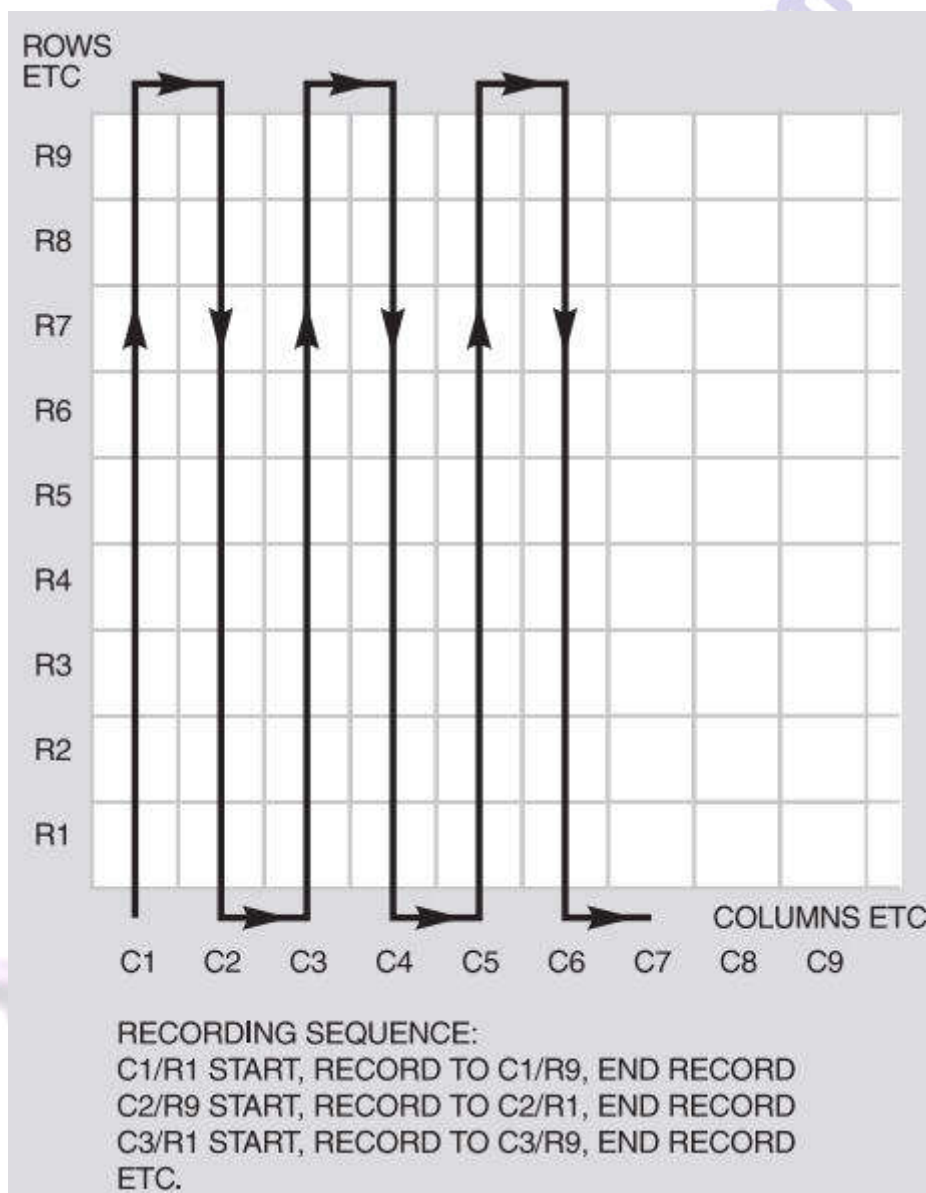
„**Parallel**" method means that after you finish recording the current column by pressing the [→] button:
you will walk back to the first row on matrix and step into next column (<u>**not turning for 180 degrees and not rotating the sensor pipe**</u>) and than start recording the column by pressing the [→] button.

RECORDING SEQUENCE:
C1/R1 START, RECORD TO C1/R9, END RECORD
C2/R1 START, RECORD TO C2/R9, END RECORD
C3/R1 START, RECORD TO C3/R9, END RECORD
ETC.
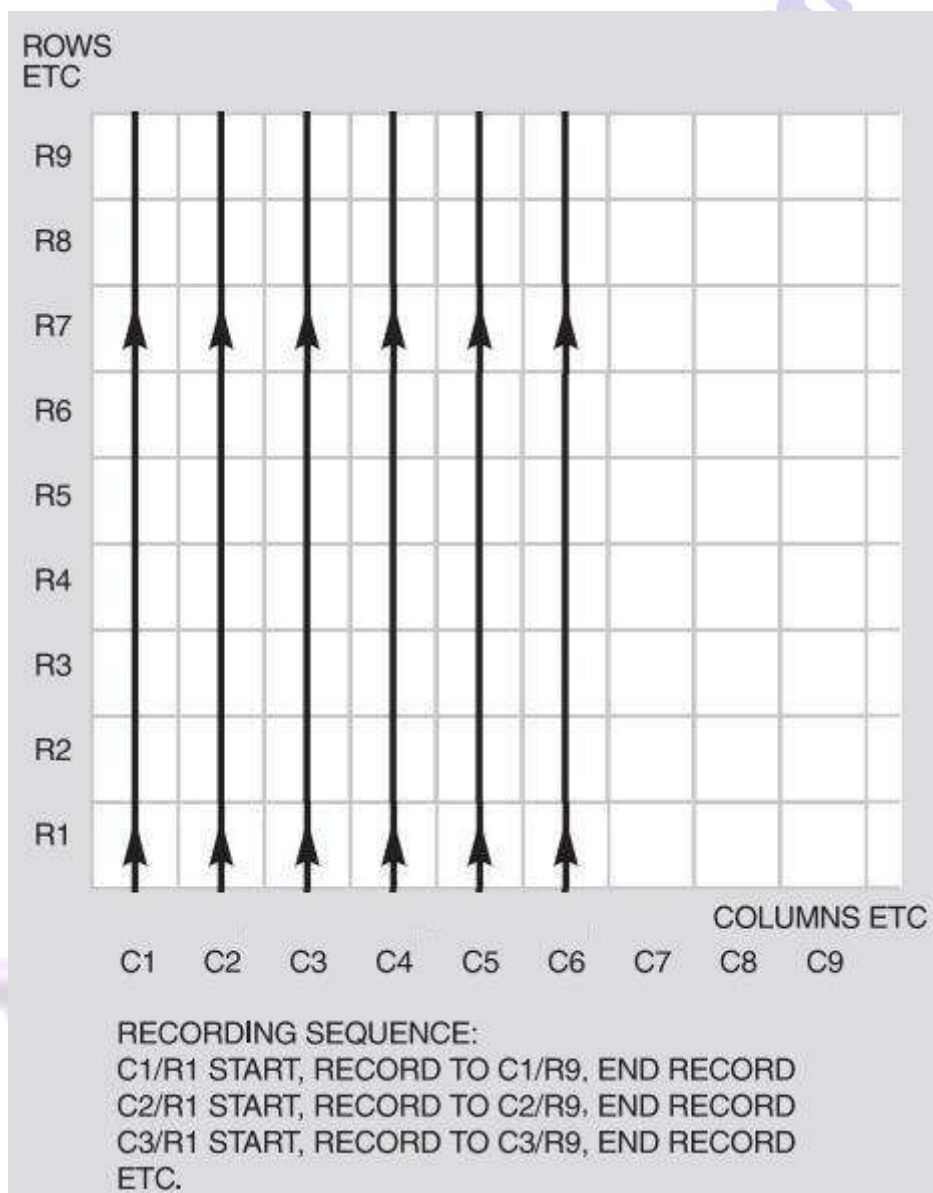
Open File / Save to File

Open a **.mag3d** format file that contains saved data and load it into your current session or save your current session to a file.

View data table

View the current session data in table form. The table is made of Rows and Columns like the graph, in current set Matrix Size and represent the data values.

View Current Data	1	2	3	4	5	6	7	8	9	10
1	256	768	1568	896	-416	-384	256	160	-	-
2	-384	96	96	96	96	128	128	96	-	-
3	160	160	64	32	32	32	-320	-160	-	-
4	224	256	320	320	352	32	0	0	-	-
5	96	64	-768	320	288	288	288	288	-	-
6	-896	-1056	416	-608	-768	-608	-192	-160	-	-
7	-224	-224	-224	-256	-288	-736	-1696	-832	-	-
8	160	224	288	-128	-96	-448	-448	-960	-	-
9	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-

20

2D **3D** <u>Toggle View (2D and 3D)</u>

The graphic representation of your data can be represented in two and three dimensions.
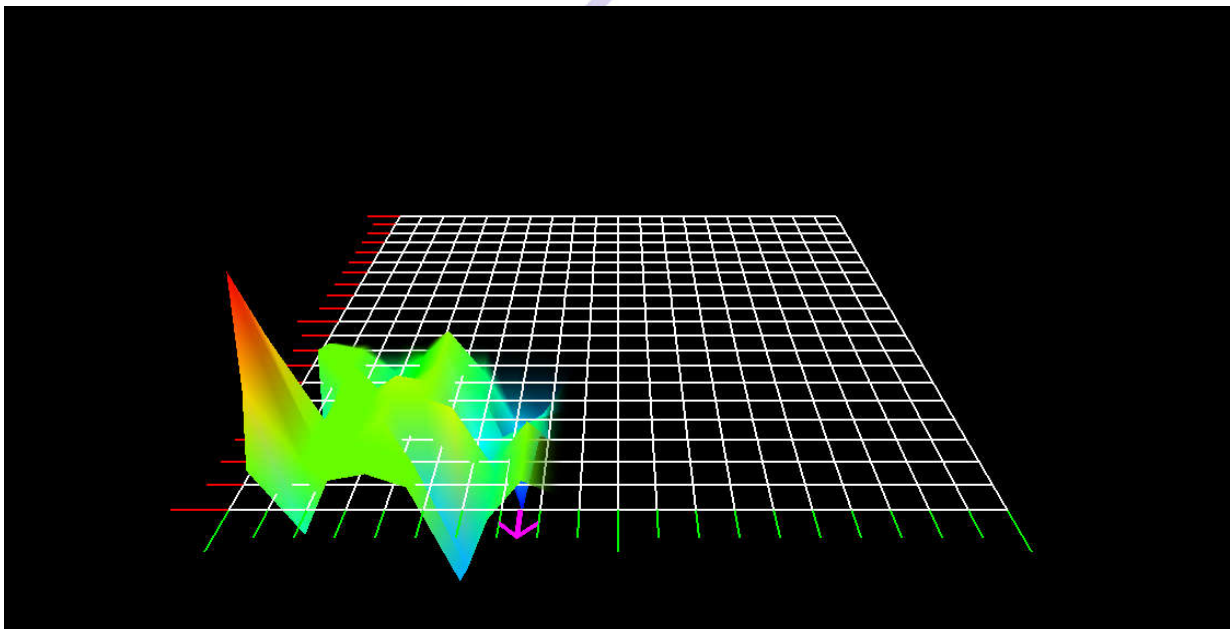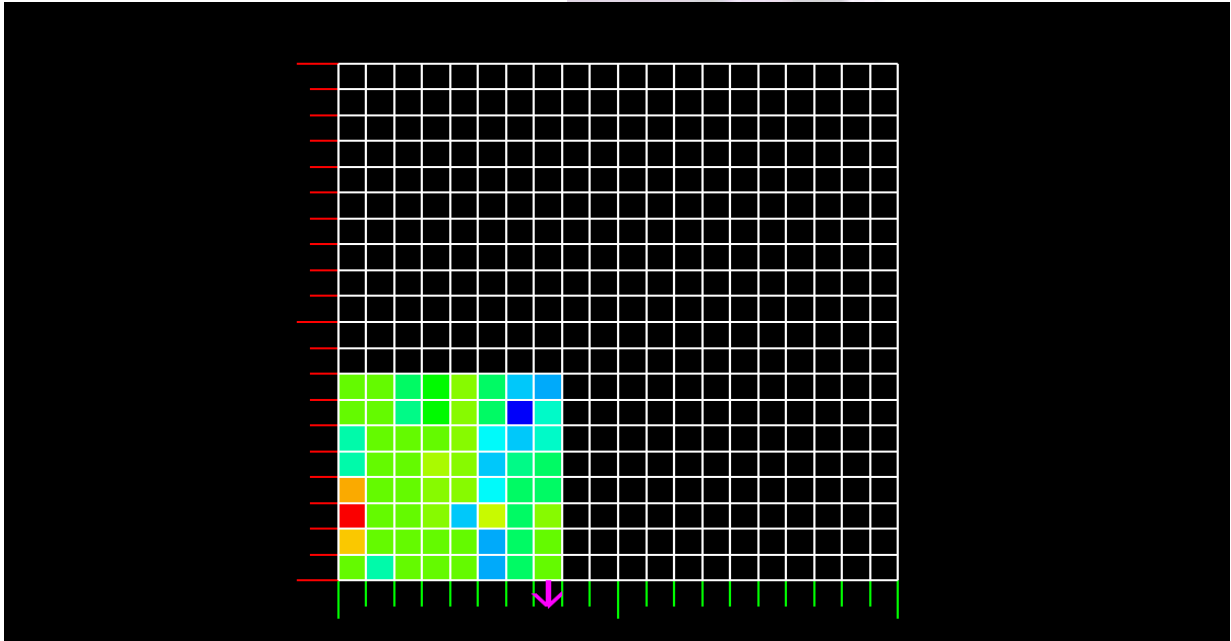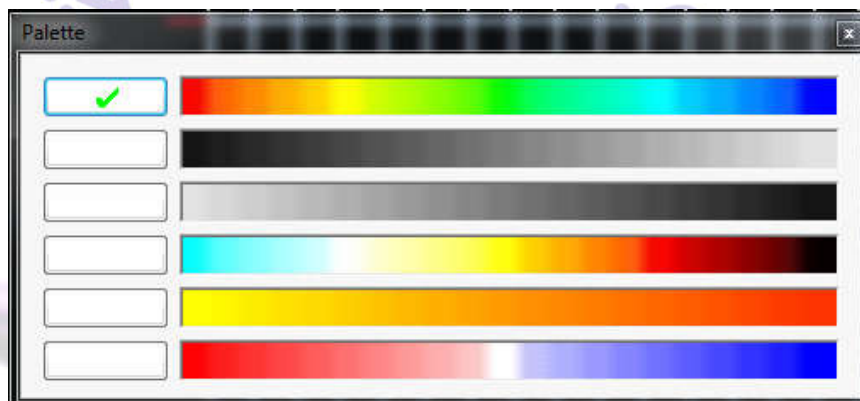
Matrix Size

Determine the size of your graph in Rows and Columns (Red axis and Green axis). The size of your graph defaults is 20x20, can't be smaller than 6x6 and greater than 40x40. This is used to determine how many matrices can be seen at an instance, you can load up to 1600 data maximum (40x40).

Palette

You can set different color combinations for your graph.

You can hide the grid and only show the "mesh" of your data, show points of the 3D geometry for better coordination, zoom in and out (additionally can be done with your mouse wheel) and auto adjust your camera point.