



SOFTWARE FOR ULTRASONIC LOW-FREQUENCY FLAW DETECTORS

A1220 MONOLITH AND A1220 ANKER

**PLANEVISOR 3
USER MANUAL**



PlaneVisor 3

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1 Guideline

1.1 This user manual describes characteristics, installation, settings and operation of the software PlaneVisor 3.

2 General information

2.1 Software function

PlaneVisor 3 is developed to work with ultrasonic low-frequency flaw detectors A1220 Monolith and A1220 Anchor (then – flaw detector or devise) manufactured by Acoustic Control Systems Ltd.

2.2 Software abilities

Software allows:

- receiving, achieving and printing out data (A-scans, Bands, Maps) from device to PC;
- recording configurations from PC to the devise and backwards;
- operation with nonvolatile memory;
- preparation of inspection reports.

3 PC requirements

For proper work of the program it is necessary to have:

3.1 IBM-compliable PC:

64 MB RAM;

Free 4 MB in the hard disk;

CD/DVD-ROM;

USB-Port 1.1 or 2.0;

OS: MS Windows® 98, Windows® 2000, Windows® XP or Windows® Vista.

3.2 Printer (if needed).



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4 Staff requirement

4.1 The operator should have skills of working in MS Windows.

5 Installation

5.1 USB drivers installation

Before installation of the software, install the drivers for A1220 MONOLITH flaw detectors for proper connection with PC.

ATTENTION: DRIVER MUST BE INSTALLED FOR EACH USB-PORT OF PC – SEPARATLY!

For driver installation:

- Turn on the device.
- Connect the flaw detector to PC. Operation system will automatically recognize the new (unknown) USB-connection and will open the new window of drivers installation.

Windows will start the process of recognizing new equipment.

The Operator have to:

- decline connection to Windows Update Server
- indicate the folder with 2 files (drivers)
- during installation attention window will appear, choose point “continue anyway”
- press the ready/finish button by the end of installation

5.2 Software installation

To install PlaneVisor 3:

Run Plane Visor 3 *.exe file.

- Follow instructions on the screen (fig.1)



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fig.1

Enter personal information and choose directory, where software should be installed (Fig.2)

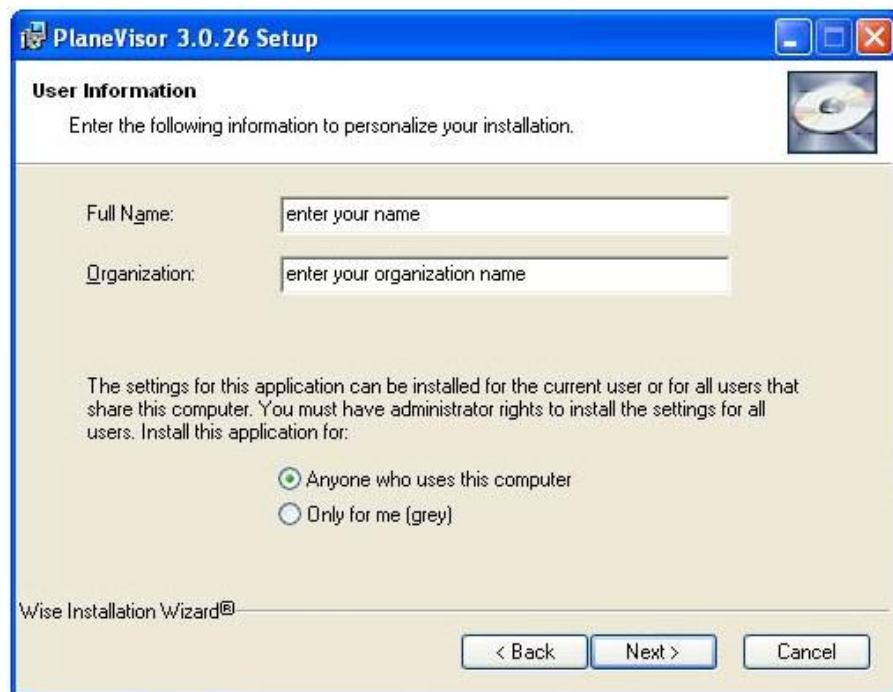


Fig. 2



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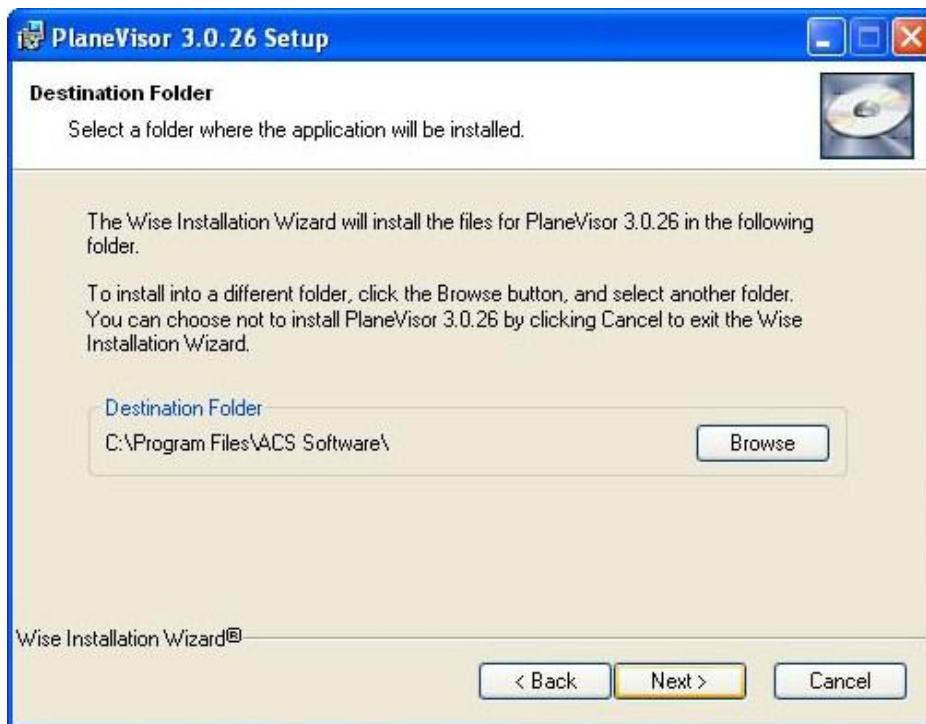


Fig.3

The operator can change earlier installation settings by pressing “back” button or continue process pressing “next” button.

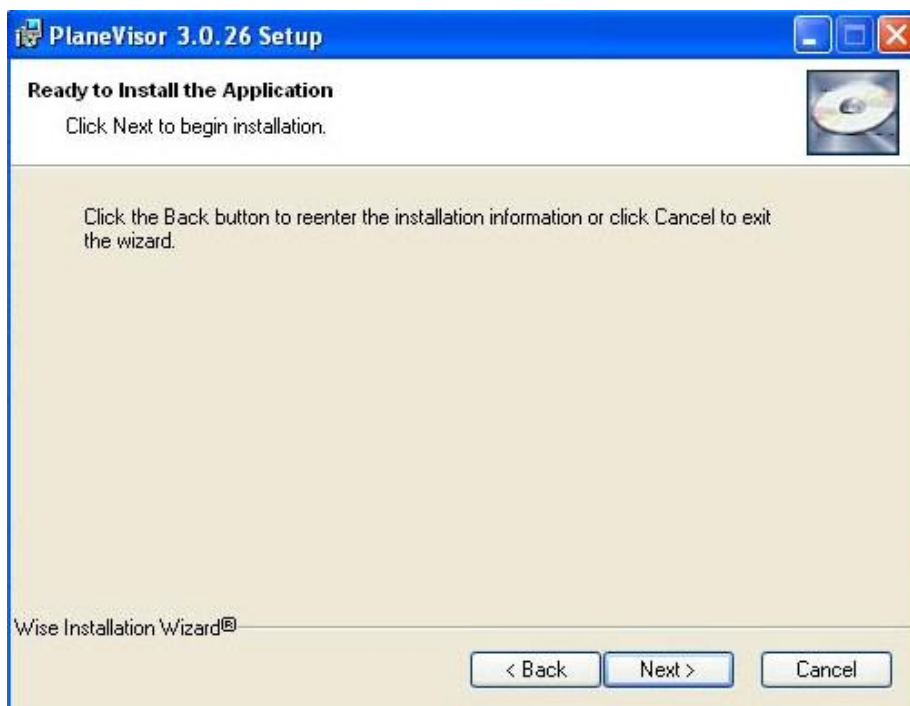


Fig.4



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Press “finish” button to complete the installation. (Fig.5)

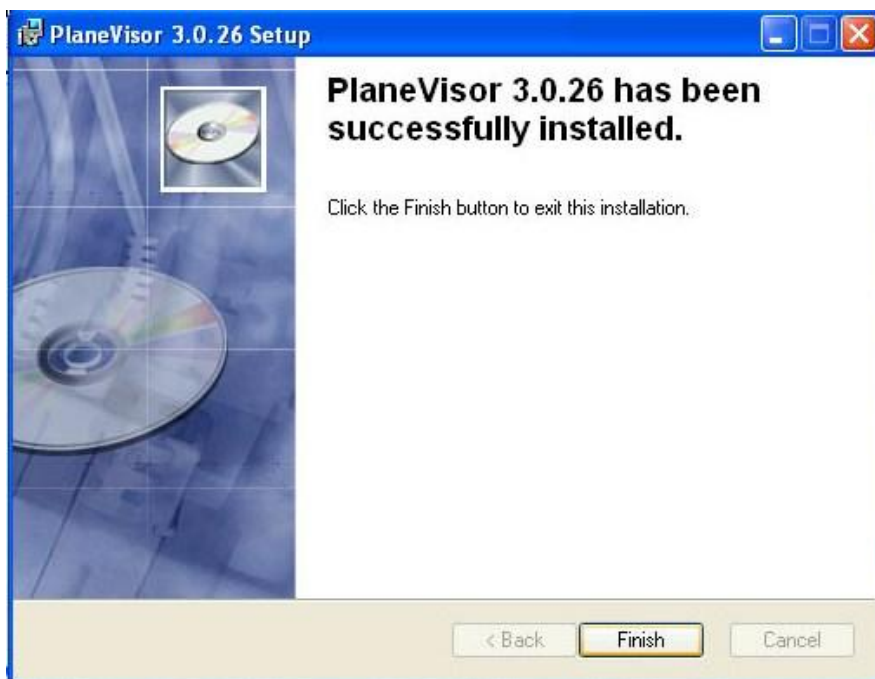


Fig.5

- Software has been installed.

5.3 Uninstall.

To uninstall program you have to:

- Use “Instrument panel→ Install and uninstall software bar” to uninstall PlaneVisor 3.

6 Starting and finishing the software

6.1 Start the software

Ways of running program:

Using shortcut of software: Start → All programs → ACS software → PlaneVisor v.3.

Run Planevisor3.exe, located X:\Program Files\ACS software\PlaneVisor 3\Planevisor3.exe, X- means hard disc where OS is installed. In successful way, PlaneVisor 3 window will appear.(fig.6)



PlaneVisor 3

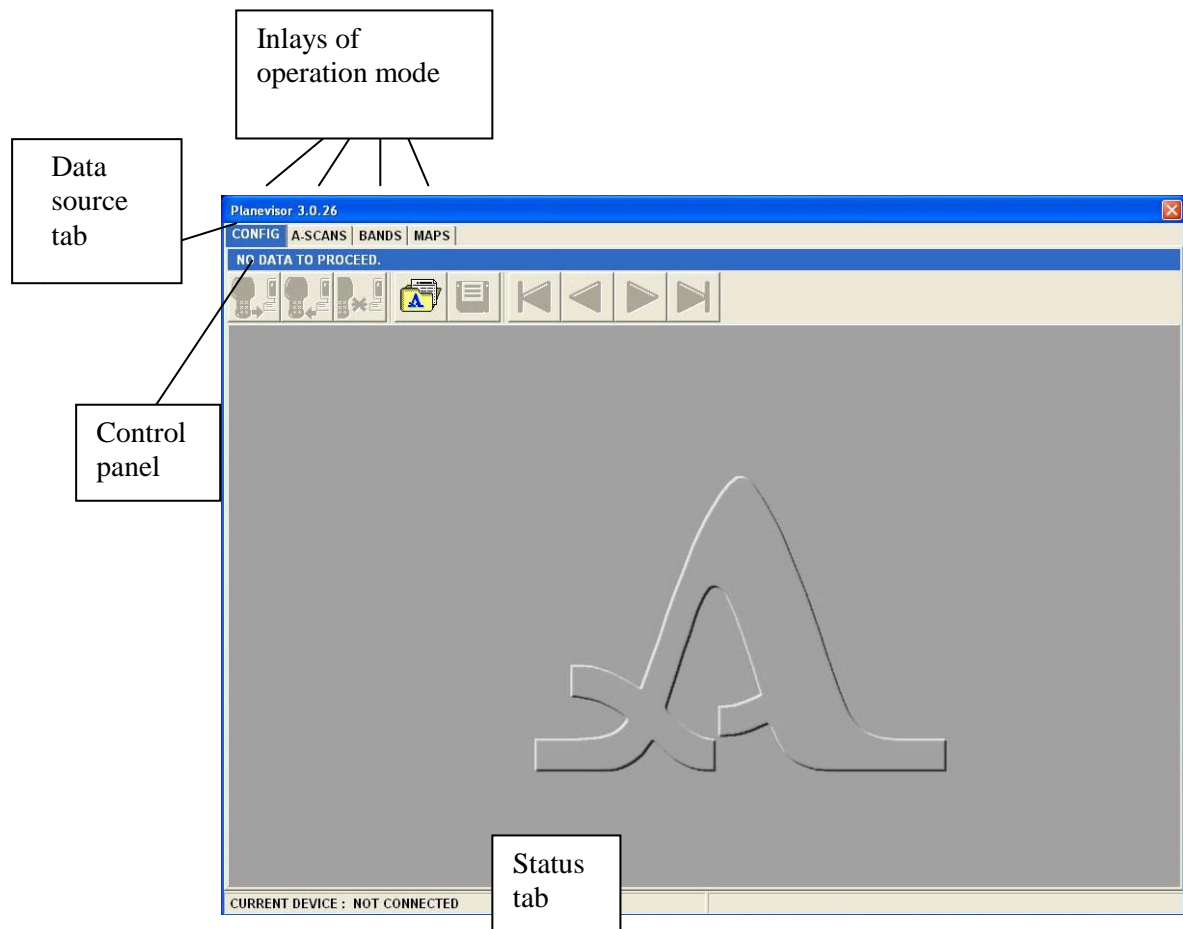


fig.6



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On the top of the window there are inlays of operation modes, data source bar and control panel. At the bottom there is a status bar, which notify if a flaw detector is connected or not.


NOTE: User can run the program before or after connecting the device.


In the Example directory there is an example file, which will help to master program easier. On default, directory Examples is located: [X:\Program](#)

Files\ACS software\Plane Visor 3\Examples\, X- means hard disc where OS is installed.

6.2 Exit the software

Before exiting the software disconnect the device from the software by

pressing  (or Ctrl+X). After that the operator can exit the software

pressing 

7 Connecting of the flaw detector

PlaneVisor 3 is compatible with flaw detectors firmware versions V.1.02.04 and higher.

7.1 Connecting of the flaw detector

Turn on the device.

Use USB cable to connect the instrument to the PC (USB cable is included in basic delivery kit).

ATTENTION! Multicontact Lemo jack should be connected to the device, keeping orientation of slots (follow the red dots on both connectors for correct connection).

Connect USB cable to the PC.

On the display of the flaw detector the operator will find inscription: "PC CONNECTION MODE".

In status bar of the program device information will appear.

7.2 Disconnection of the flaw detector.

Firstly, close the program, then disconnect the device, or use buttons of safe disconnection.



8 Operation of the software PlaneVisor 3

8.1 Operation modes

Operation modes are supported for A1220 MONOLITH: CONFIG, A-SCANS, BANDS, MAPS, FLASH.

Two operation modes are supported for A1220 ANKER CONFIG and A-SCANS.

Each mode has its inline in the bottom of Plane Visor window.(Fig.7)



Fig.7

CONFIG mode is intended for editing, saving on PC and recording configuration in device.

A-SCAN mode is intended for reviewing, printing and saving A-Scans on PC. A-Scans will have the same settings as they had by the moment they were made in the flaw-detector.

BANDS mode is intended for reviewing, printing and saving bands of B-Scans on PC. Bands will have the same settings as they had by the moment they were made in the flaw-detector.

MAP mode is intended for reviewing, printing and saving maps of C-Scans, B-Scans and D-Scans on PC. Maps will have the same settings as they had by the moment they were made in the flaw-detector.

FLASH mode is intended for reviewing memory capacity, amount of recorded information (A-Scans, Bands, Maps) and also free memory. This mode is also used for relocating flash memory. Flash tag appear only when the device is connected.



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8.2 CONFIG Mode

Overview of CONFIG mode window.(fig.8)

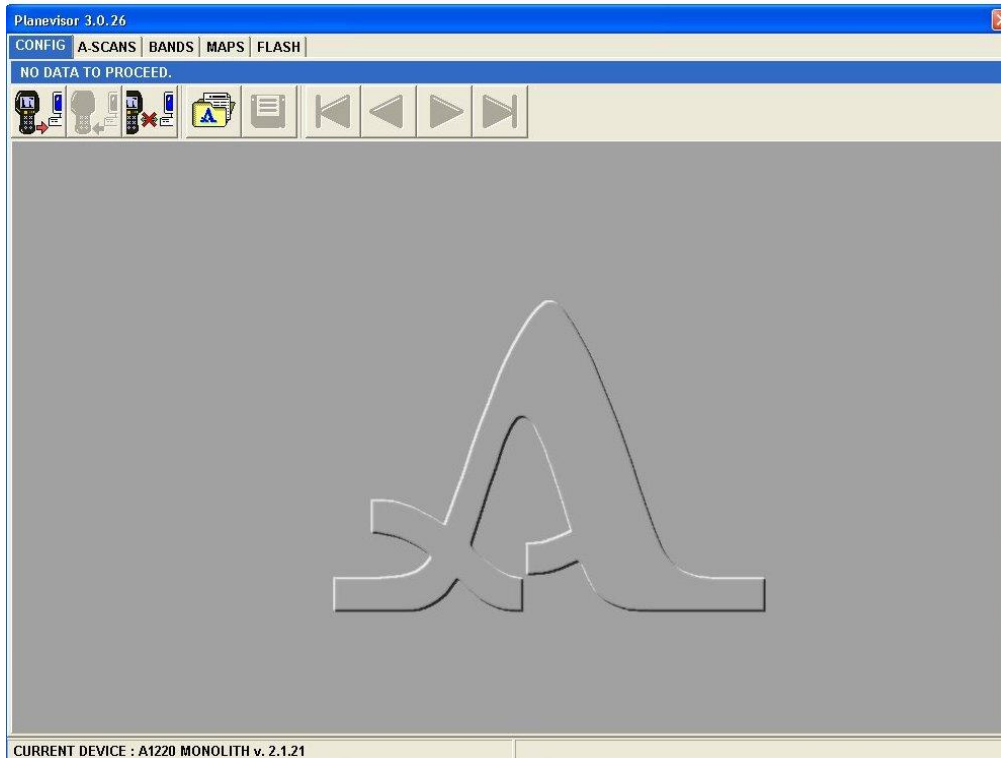


Fig.8

8.2.1 Control buttons in CONFIG mode.



-Load configurations from the device. Press F1 fast key and F2 fast key to sent selected configurations to the device.



-Safety disconnection of the device (CTRL+X).



-Load configurations (F3).



-Save configurations (F4). PlaneVisor 3 will save configurations as *.ctf file.



-Select first available configuration (F5).



-Select previous available configuration. (F6).



-Select next available configuration (F7)



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-Select last available configuration (F5).

8.2.2 Loading configurations

The operator should load configurations to start work in that mode.



- Press button to load configurations (F4). Choose *.ctf file in the next window.(Fig.9)

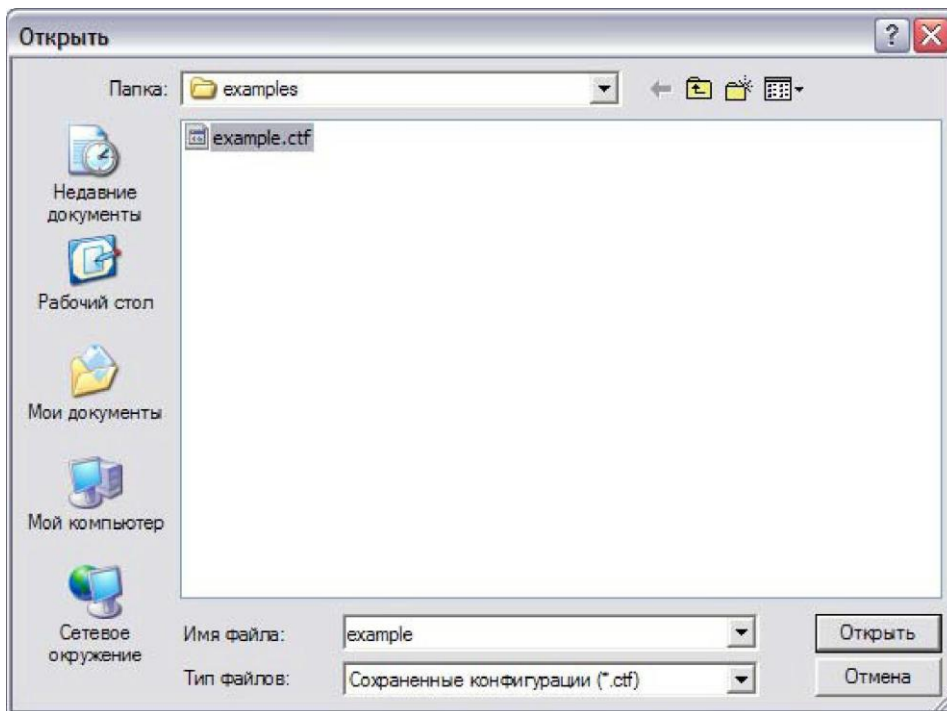


Fig.9

PlaneVisor 3 will open file and show information in data source bar. (fig.10)



Fig.10

To receive configurations from device press button, which is active only when the flaw detector is connected. Information will appear in status tab.(Fig.11)

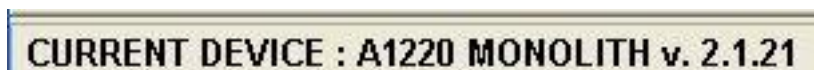


Fig.11

8.2.3 CONFIG Mode elements.

«CONFIGURATION LIST» - is a table, where a list of available configurations are shown. The operator can change displayed configuration by navigation between the lines. (fig.12)

CONFIGURATIONS LIST		
#	CONFIG NAME	I
1	EXAMPLE1	
2	EXAMPLE2	
3	EXAMPLE3	
4	EXAMPLE4	

Fig.12

Column «№» contains numbers of configurations, which assign automatically.

Column «CONFIG Name» contains names of configurations.

Column «I» can contain «*», which means that configuration was changed and that configuration is chosen to be set to the device.

To choose or cancel process of sending configuration to the device, make double click on the left mouse button in the configuration line in column «I». Double click in the head of the column «I» mark/cancel symbol «*» to the all column.

Double click on the configuration name line allows the operator to change name of configuration. (fig.13) The name can consist of no more than 19 letters, numerals or special signs.

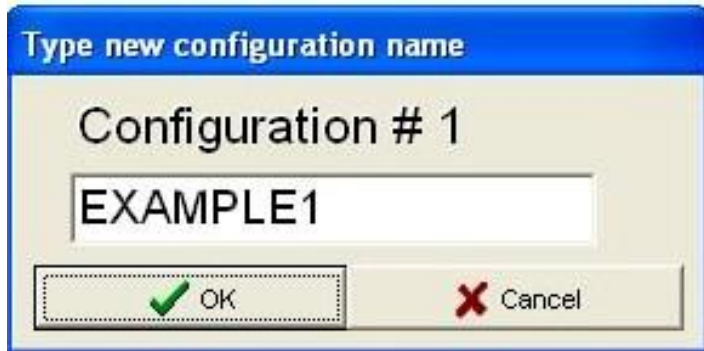


Fig. 13

«COMMENTS» - empty area, intended for typing comments for every configuration. Comments are saving with configurations on the PC.

«CONFIGURATION SETTINGS» - shows current settings of the device that can be changed. Integrated data are the same as in the MENU MODE in the flaw detector.

8.2.4 Operating with configurations.

Configuration mode is easy to work with big number of configurations, because it allows to edit, correct and save many settings. It is possible to generate up to 20 different configurations.

After receiving configurations from the device to PC (8.2.2.) and choosing one of them, it is sent to the flaw detector as a current one.

ATTENTION: EVERY CHANGING OR ENTERINNG NEW SETTINGS IN "CONFIGURATION SETTINGS" COLUMN MUST BE CONFIRMED BY PRESSING "ENTER" BUTTON!

After editing one configuration, switch over an other.

It is necessary to sent earlier changed or new-created configurations to the device, otherwise they will be located only on PC.

8.3 A-SCAN MODE

Overview of A-SCAN MODE window.(fig.14)



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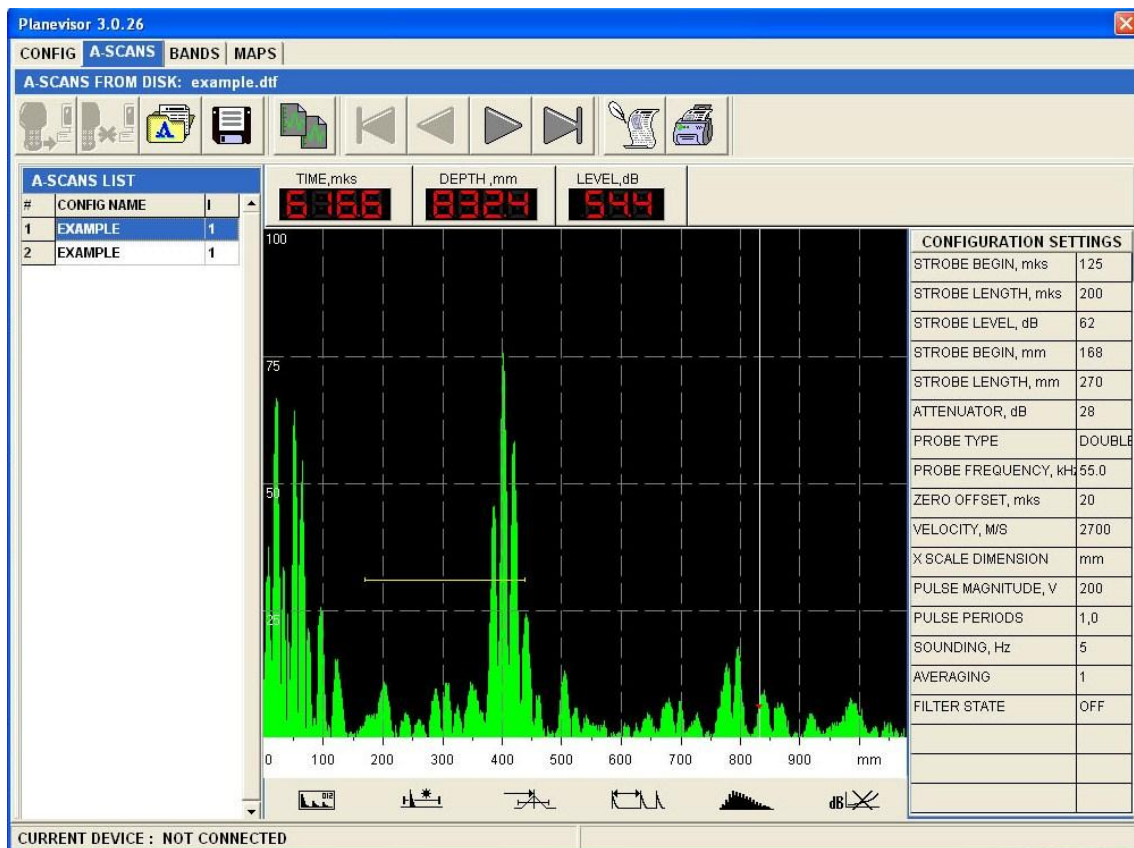


Fig.14

8.3.1 Control buttons in A-Scan mode



-load A-Scans from the device (F1). "



-Safety disconnection of the device (CTRL+X).



-load file with A-Scans (F3).



-Save A-Scans (F4). Program will save A-Scans as a *.dtf file.



-Copy image of selected A-Scan to the clipboard (F5)



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-Move to the first A-Scan (F6).



-Move to the previous A-Scan (F7).



-Move to the next A-Scan (F8).



-Move to the last A-Scan (F9).




-Enter text comments to A-Scan (F11).



-Preview and printing a report of the chosen A-Scan (F12).

8.3.2 Loading data

To start work it is necessary to load information of made A-Scans.

To load information from the file the operator should press  (F3)
In the next window choose *.dtf file. (Fig.15)

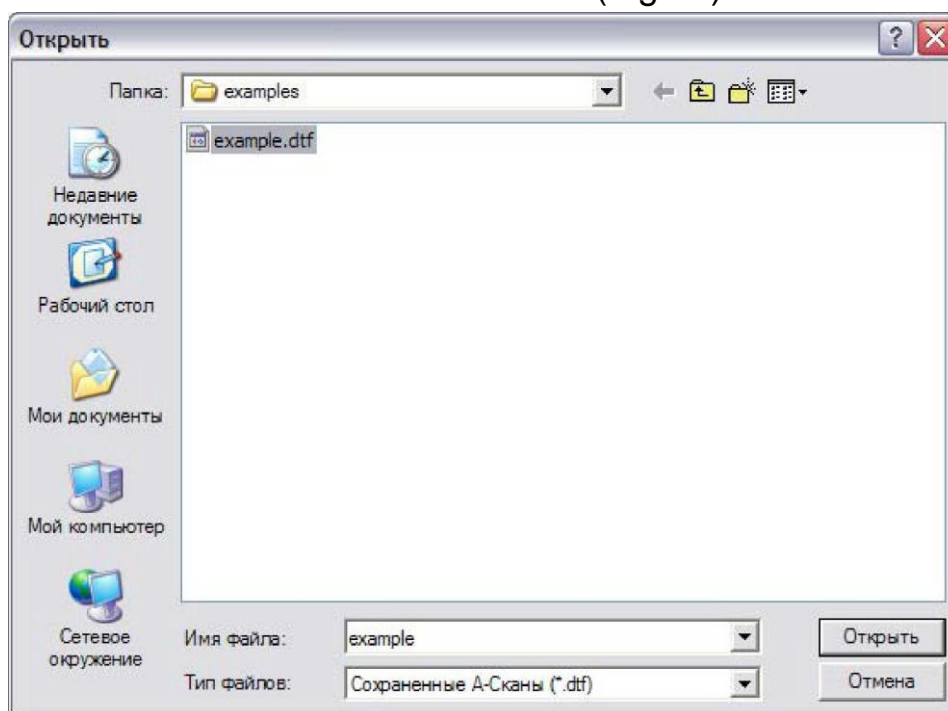


Fig.15


Program will recognize the file and give information about the source in the data source tab.(Fig.16)



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Fig16

Press  button to load data from the device (F1). Button is active only when the instrument is connected. Program will identify A-Scans which were saved in the flaw-detector.
The device will be shown in the status tag.

8.3.3 Elements of A-Scan tab.

- «A-SCAN LIST» - received A-Scans are shown in the table. Choosing the image of A-Scan is made by moving between the lines of the table. (Fig.17)



#	CONFIG NAME	I
1	EXAMPLE	1
2	EXAMPLE	1

Fig.17

There is an opportunity to save each A-Scan as separate file. Press right mouse-button on the A-Scan name, which is necessary to save and choose checkmark "Save selected A-Scan" (Fig.18)

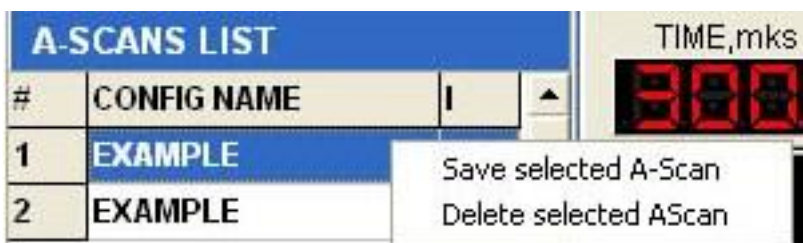


Fig.18

Enter a route of saving A-Scan file in the next window. (Fig.19)



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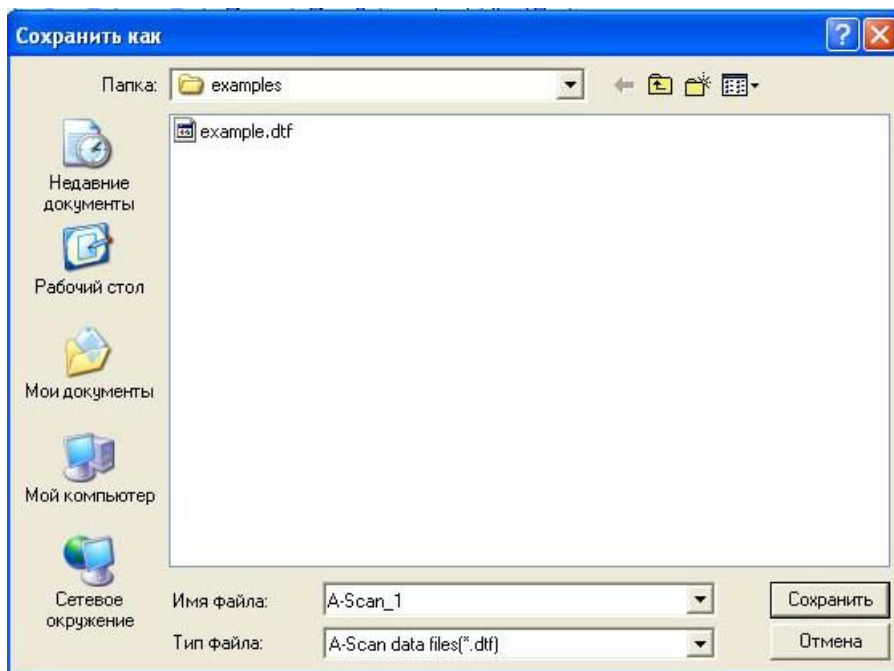


Fig.19

There is an opportunity to delete selected A-Scan. Press right mouse button and click on the “Delete selected A-Scan” checkmark.(Fig.20)

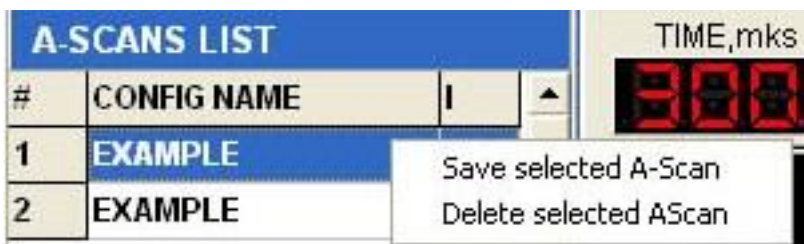


Fig.20

Confirmation window with help text will appear.(Fig.21)



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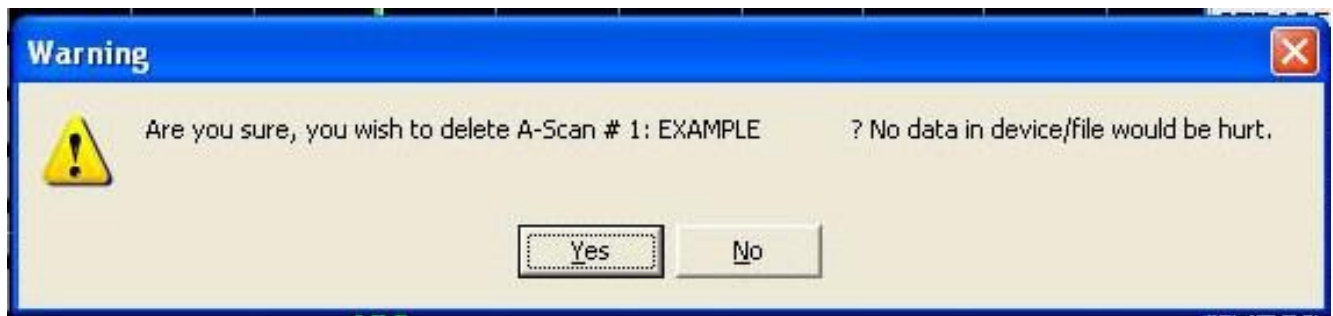


Fig.21

Column «№» enclose through numbers of the shots, which assign automatically.

Column "CONFIG NAME" encloses configuration names, when each A-Scan was made.

Column "I" enclose additional numbers. Numbers are set to an each shot when recording to the instrument (automatically or manually).

-Results of the measurements- Moving and holding left mouse button on the A-Scan, signal parameters will be shown on the screen. (Fig.22)



Fig.22

(Fig.23) Ultrasonic signal, horizontal and vertical mark up of the screen, strobe, measuring cursor and icon menu by the moment an A-Scan was made, are shown in the picture. Review and Zoom mode are maintained.



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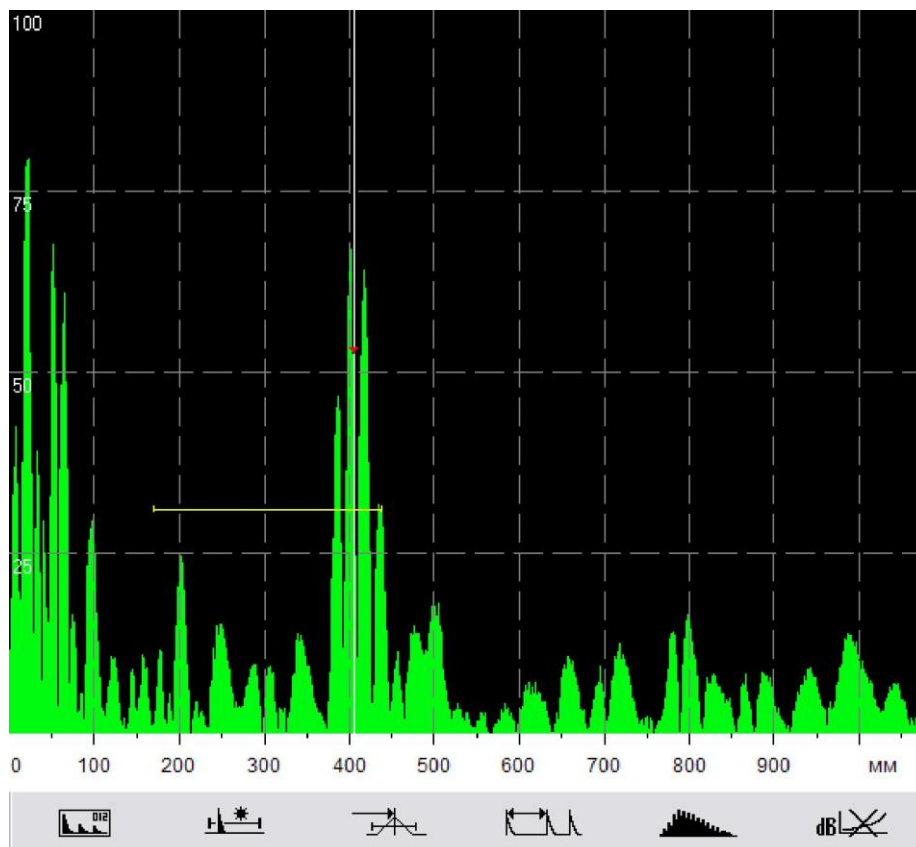


Fig.23

“CONFIGURATION SETTINGS - device settings by the moment A-Scan was made are shown in the table.

8.4 Overview of BANDS MODE window

View of the BANDS mode screen.(Fig.24)



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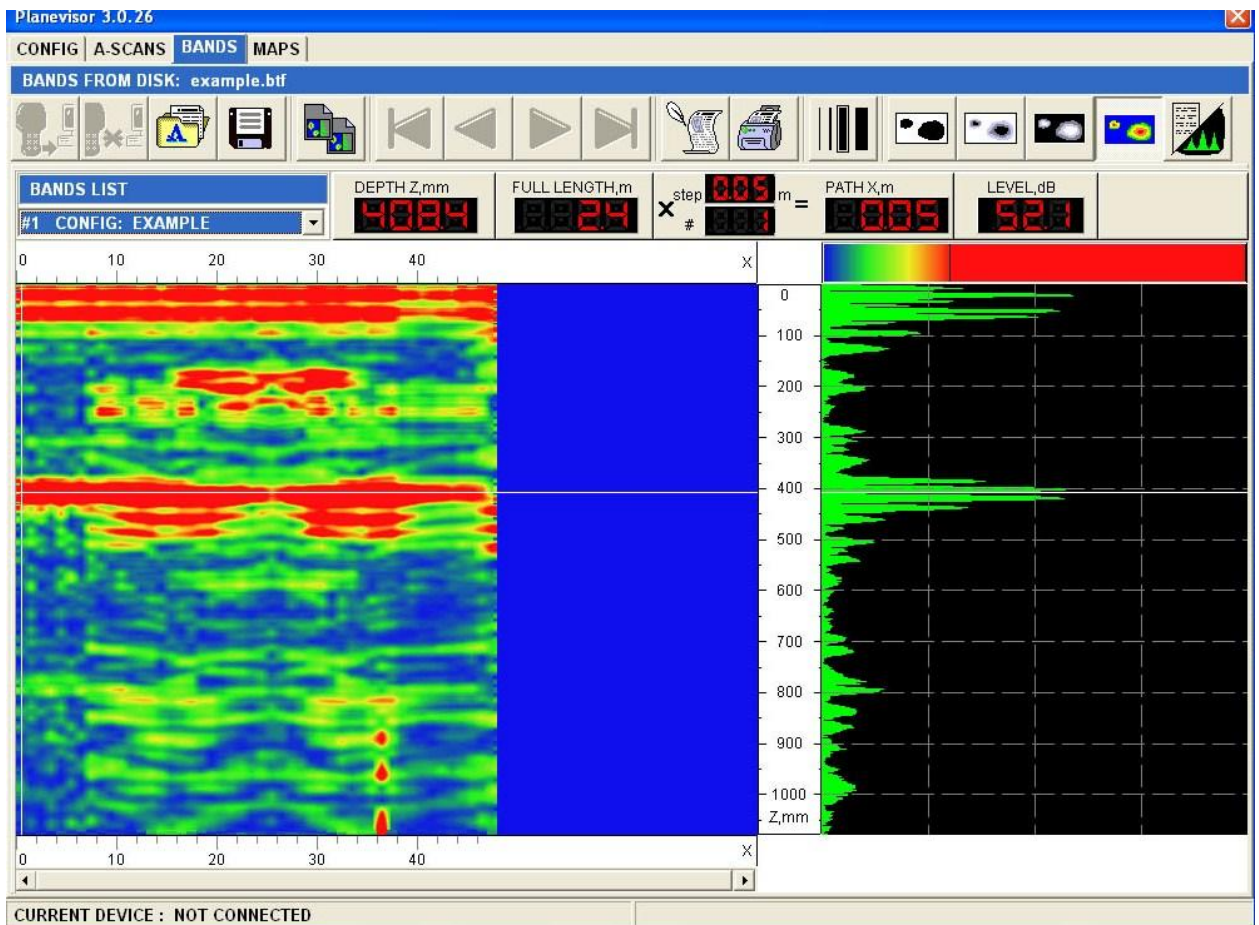


Fig.24

Control buttons in BANDS mode.



- receive bands from the device (F1)



-safety disconnection of the device (CTRL+ X)



-load file (F3)



-save bands (F4). Program will save bands as a *.btf file.



-copy all images of chosen band it the clipboard (F5).



-Show first available band (F6).



- Show previous available band (F7).



- Show next available band (F8).



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- Show last available band (F9).



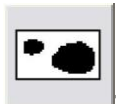
-Add comments to the current band (F11).



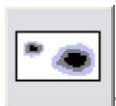
-Print report on current band (F12).



-Switch B-Scan line weight.



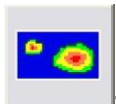
-Apply binary b/w threshold scheme.



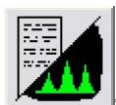
-Apply direct gradient b/w color scheme.



-Apply direct gradient b/w color scheme.




-Apply ACSYS acoustic color scheme.



-Switch between A-Scan/param display.

8.4.2 Data loading.

Load earlier made bands to start.

- Press  button to load data files, chose *.btf file.(Fig.25)

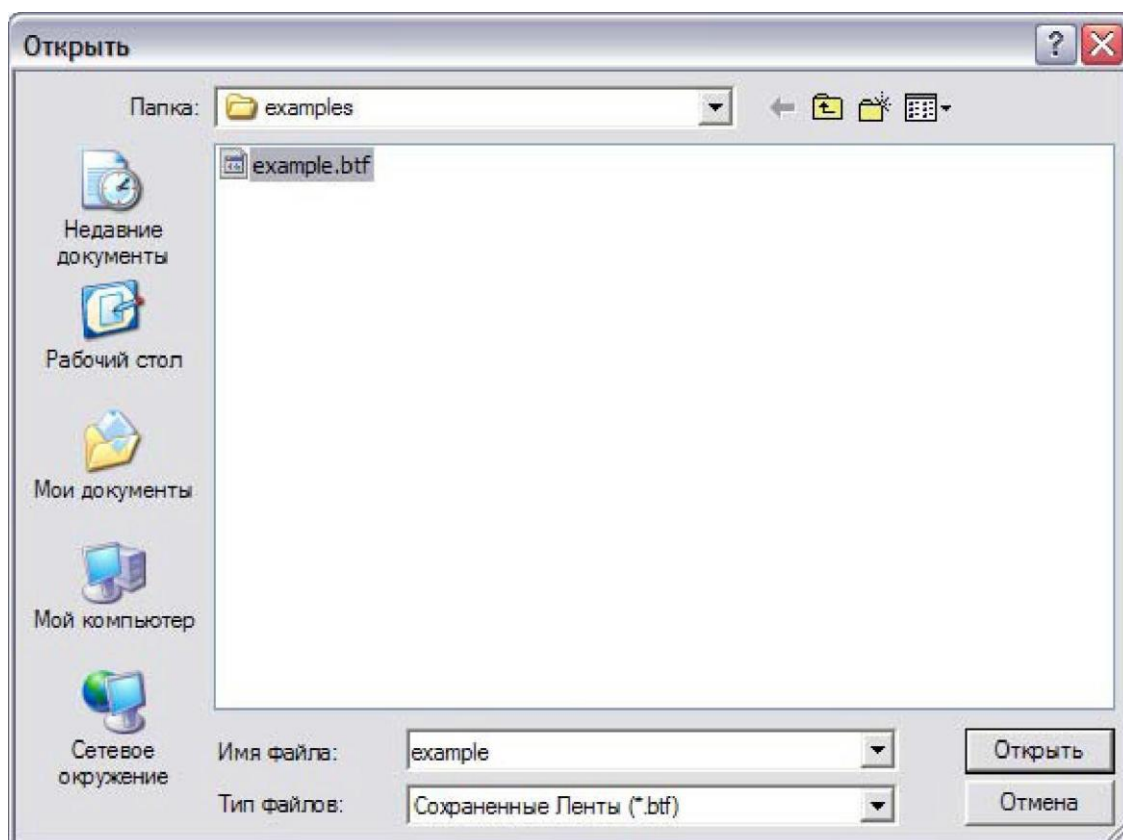



Fig.25

Program will recognize the file and give information about the source in the data source tab.(Fig.26)



Fig.26

Press  button to load data from the device (F1). Button is active only if the instrument is connected. Program will recognize the file and give information about the source in the status tab.



«BAND LIST» - List of available bands. (Fig.27)



Fig.27

There is an opportunity to save each band as a separate file and delete band from the current band list. These directions are the same to the A-Scans and described in the 8.3.3. point.

Each line contains:

List number of the band (#) – band number, which assigns automatically.

Configuration name (CONFIG :) - configuration name, when the band was made.

Measurement results - Moving and holding left mouse button on the B-Scan, signal parameters will be shown in the screen.



Colorful B-Scan of the band is available. Ultrasonic signal, horizontal and vertical mark up of the screen, measuring cursor -are shown in the picture.(Fig.28)



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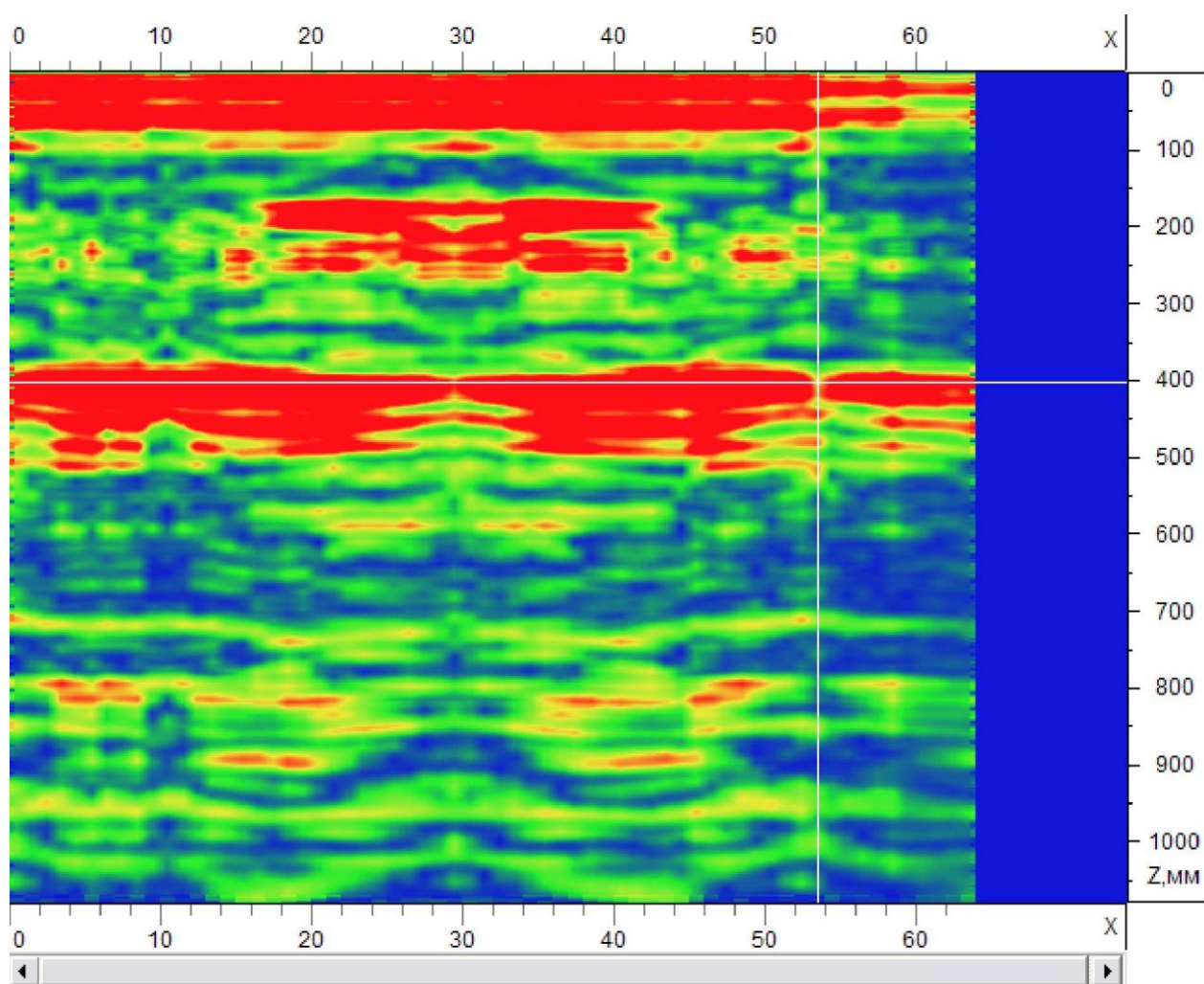


Fig.28

«A-Scan/PARAMETRES»

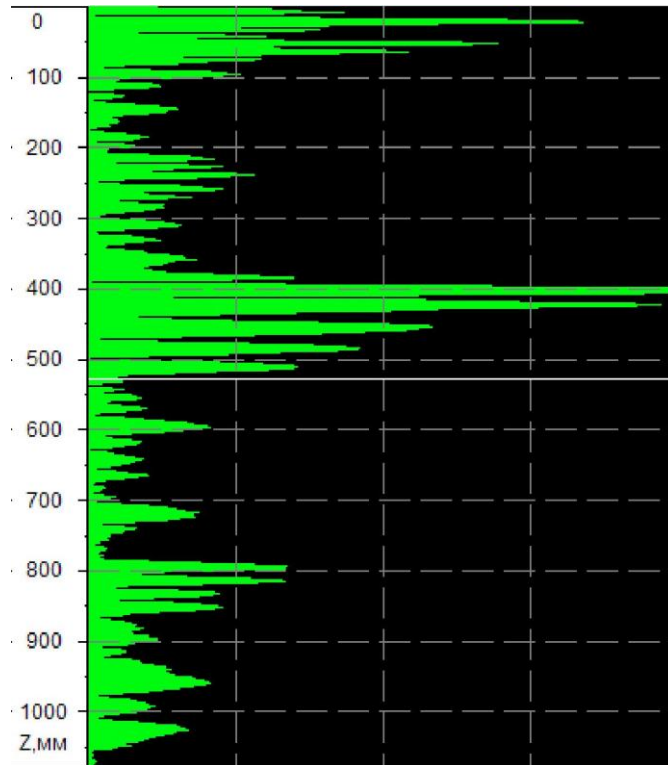


Fig.29

A-Scan or a table of the band with the settings of the device when A-Scan was made are shown in the picture.

A-SCANS IN BAND: 48 BAND STEP, mm: 50

Information about A-Scans number in band and band step is shown in the status bar.

8.5 MAP MODE

Overview of MAP MODE window.(Fig.30)



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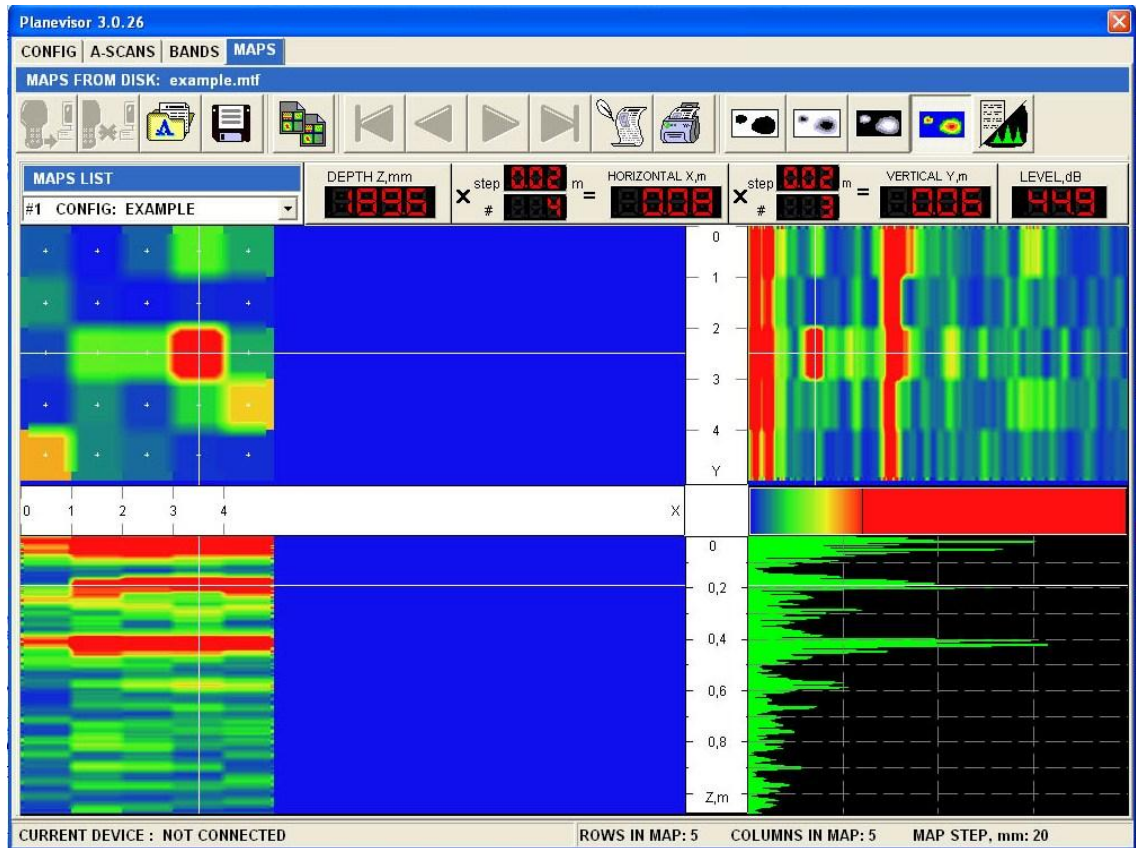


Fig.30



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Control buttons of MAP MODE.



- receive maps from the device (F1)



-safety disconnection of the device (CTRL+ X)



-load file (F3)



-save maps (F4). Program will save maps as a *.mtf file.



-copy images of the current map to the clipboard (F5).



-Select first available map (F6).



- Select previous available map (F7).



- Select next available map (F8).



- Select last available map (F9).



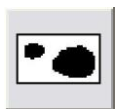
-Add comments to current map (F11).



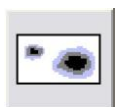
-Print report on current map (F12).



-Switch B-Scan line weight.



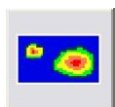
-Apply binary b/w threshold scheme.



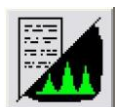
-Apply direct gradient b/w color scheme.



-Apply direct gradient b/w color scheme.




-Apply ACSYS acoustic color scheme.



-Switch between A-Scan/param display.

8.5.2 Data Loading

To start working in program it is necessary to load maps. Press  button (F3) and choose *.mtf file.(Fig.31)

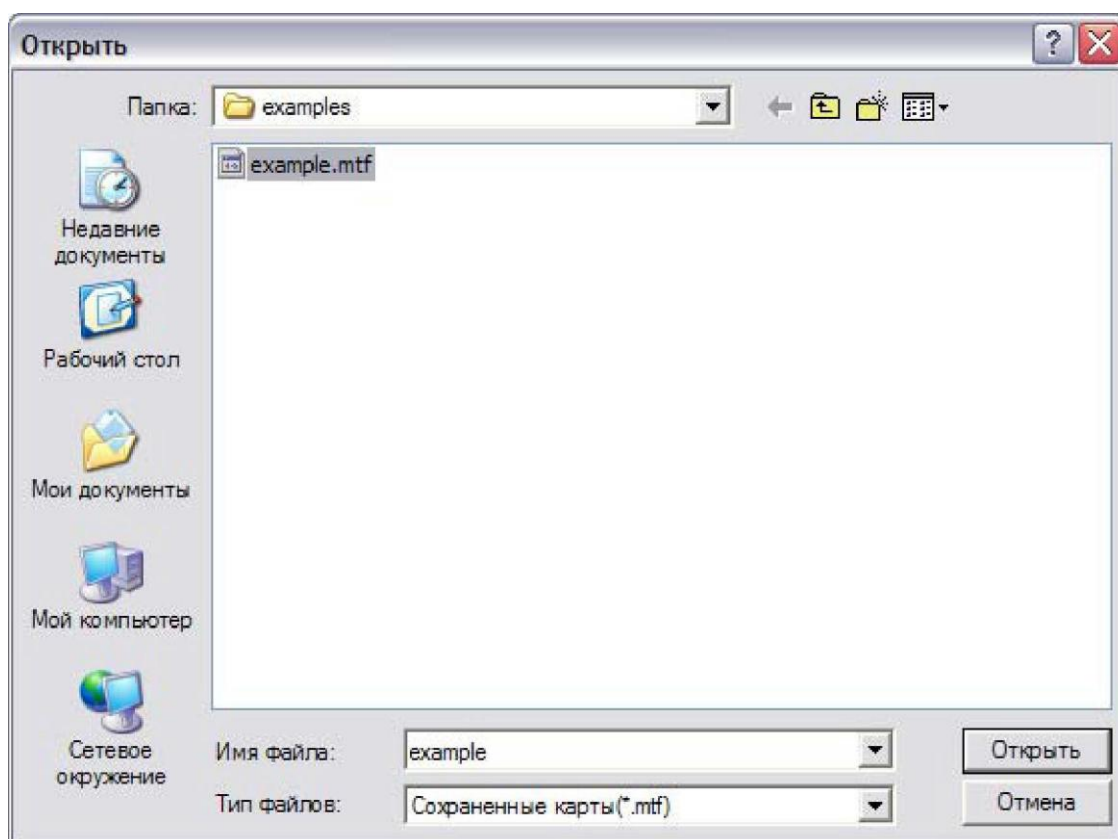


Fig.31


Program will recognize the file and give information about the source in the data source tab.(Fig.32)



Fig.32



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Press  button to load data from the device (F1). Button is active only if the instrument is connected. Program will recognize the file and give information about the source in the status tab.

8.5.3 Map mode tabs.

- «MAP LIST» - List of available maps.(Fig.33)

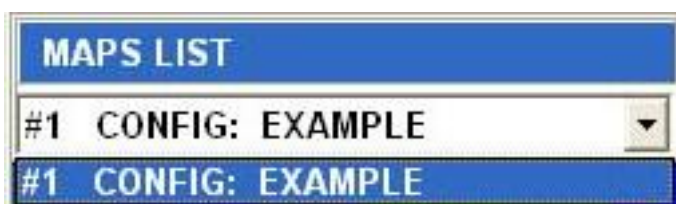


Fig.33

There is an opportunity to save each map as a separate file and delete map from the current map list. These directions are the same to the A-Scans and described in the 8.3.3. point.

Each line contains:

List number of the map (#) – map number, which assigns automatically.

Configuration name (CONFIG :) - configuration name, when the map was made.

Measurement results – settings measurements in the cursor point of intersection.(Fig.34)



Fig.34

Display shows colorful C-Scan, B-Scan and B-Scan of the current map. Ultrasonic signal, horizontal and vertical mark up of the screen, measuring cursor -are shown in the

picture.(Fig.35)

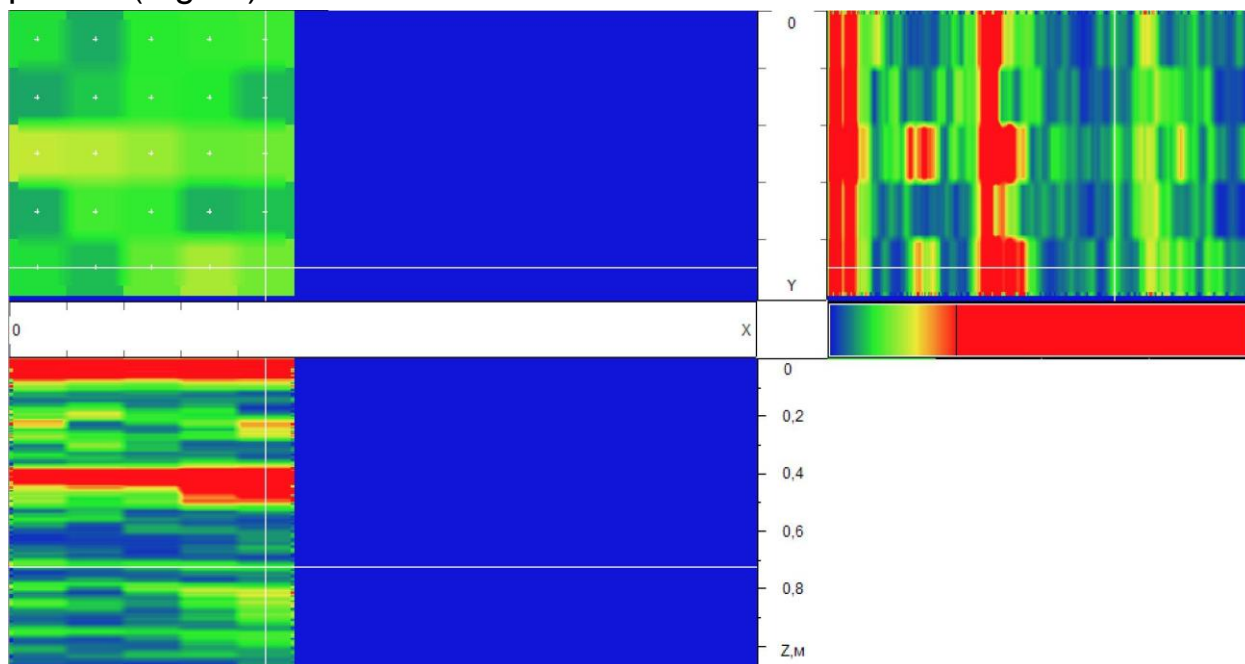


Fig.35

«A-Scan/Device Param.».

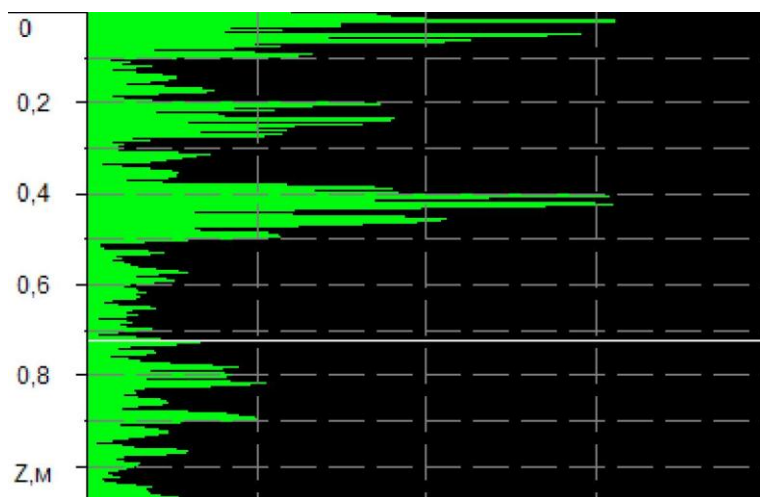


Fig.36

A-Scan or tables of the map with the settings of the device when A-Scan was made are shown in the picture.

Information about number of bands in the map, columns in the map and map step is shown in the status bar.



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ROWS IN MAP: 5

COLUMNS IN MAP: 5

MAP STEP, mm: 20

8.6 FLASH mode.

FLASH mode allows to see capacity of a memory, extracted for each kind of data (A-SCANS, MAPS,BANDS), amount of used memory and also allows to relocate the whole memory between maps and bands.

Overview of flash mode window.(Fig.37)

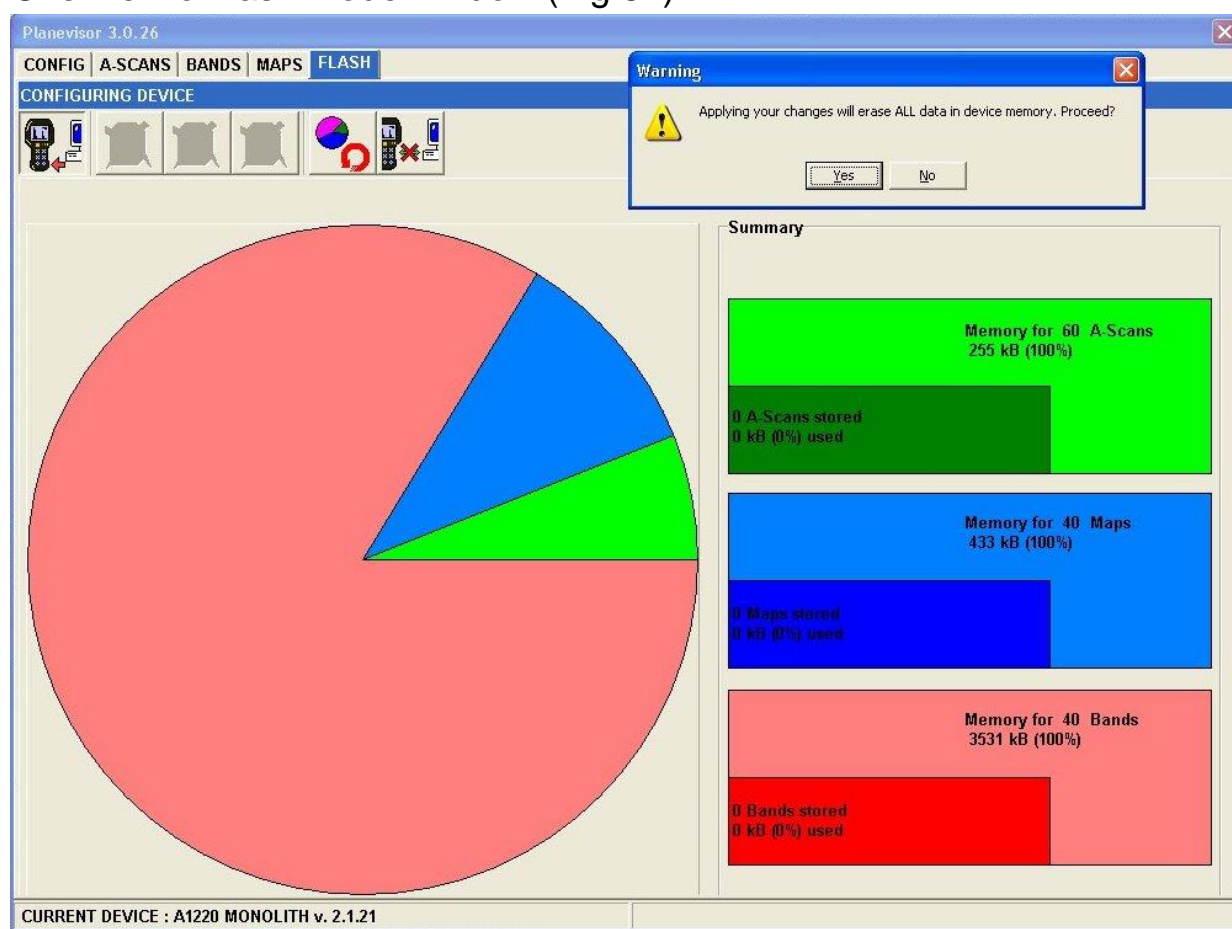


Fig.37

Control buttons of FLASH mode.



-apply new flash markup (F1).



-erase all A-Scans from device (F2)



-erase all Bands from device (F3)



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-erase all Maps from device (F4)



- cancel flash markup(F5).



-disconnect device from PC (CTRL+X).

8.6.2 Flash mode elements

- Circle diagram of flash-memory use. By pressing left mouse button on the sector appropriated to maps or bands (blue and red sectors), hereupon capacity of dedicated sector is changing.(Fig.38)

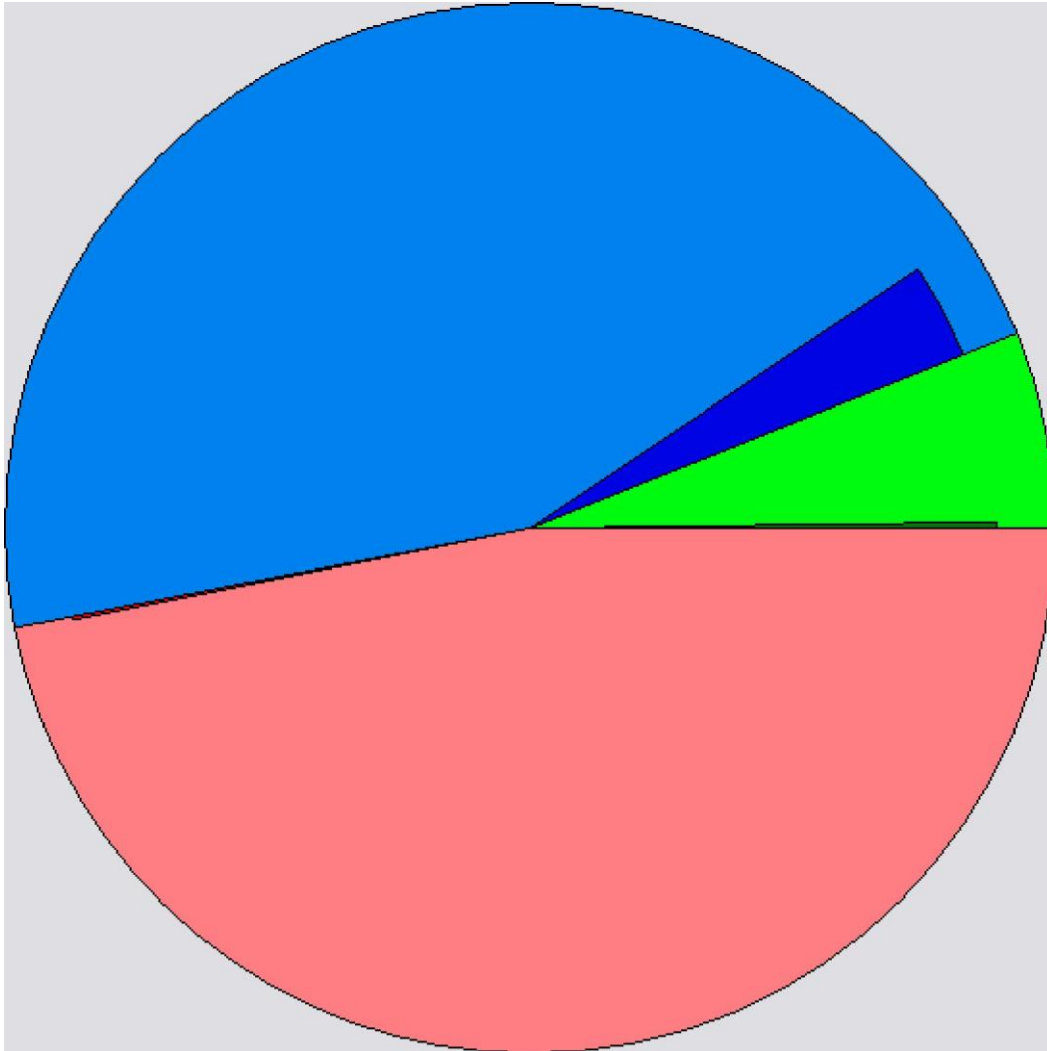


Fig.38



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Afterwards the made relocation can be saved or canceled.

ATTENTION: AFTER RELOCATING MEMORY BETWEEN BANDS AND MAPS, INFORMATION WILL BE DELETED IRREVOCABLY!



To save changes press button. Confirm or cancel changes in the next window.(pc.39)

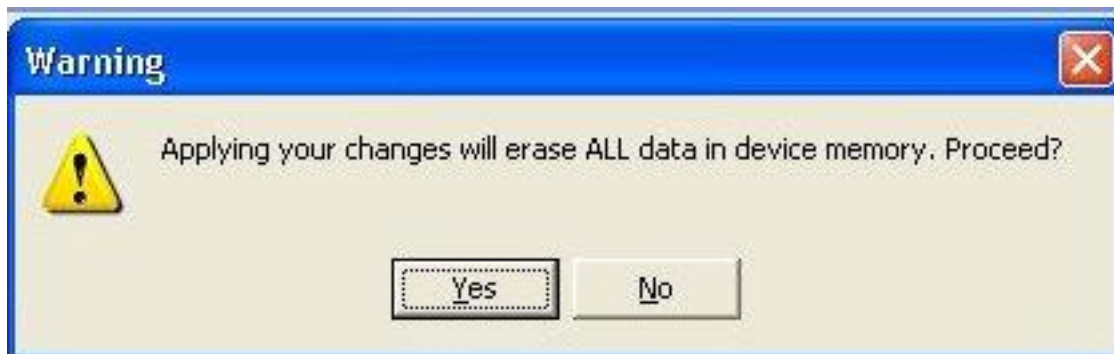


Fig.39

Only A-Scans will be saved in the memory after the memory relocation.

- «Summary» - shows procent and numeric correlation of extracted memory for each kind of information.

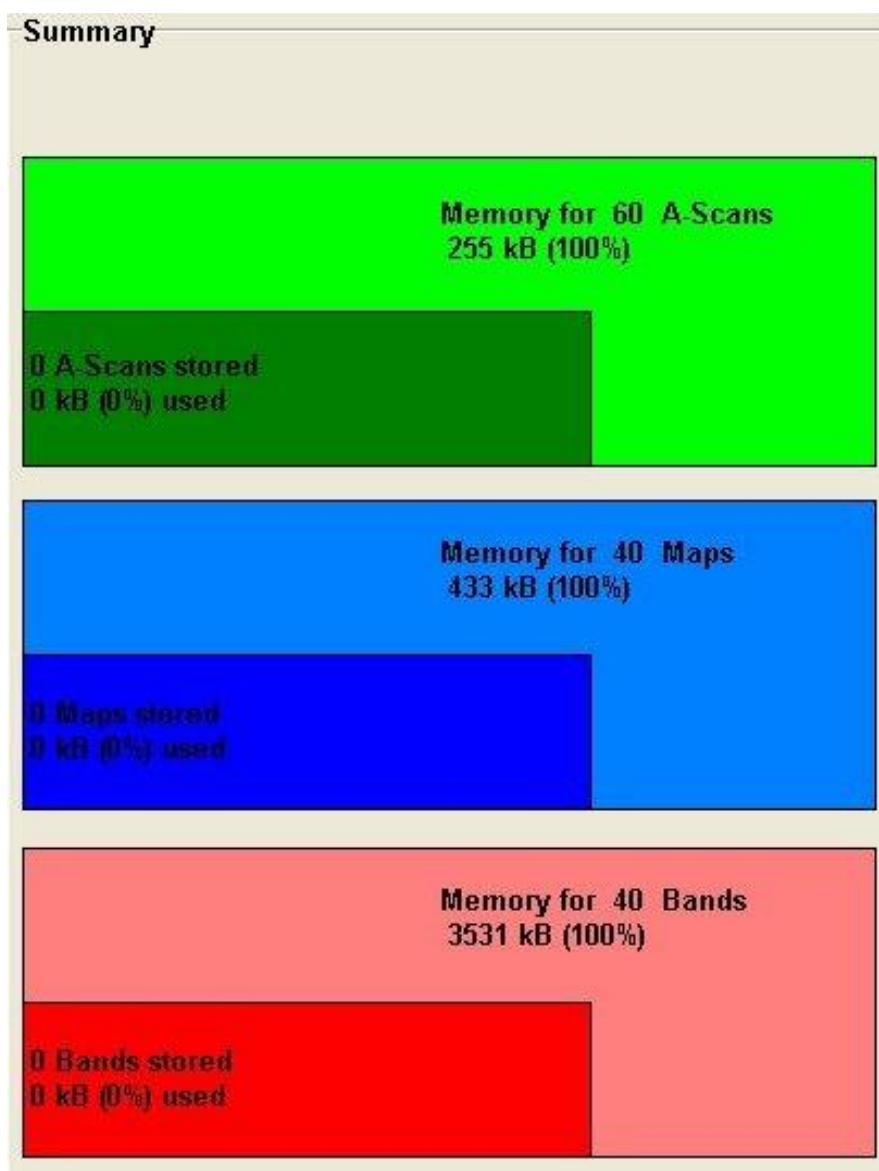

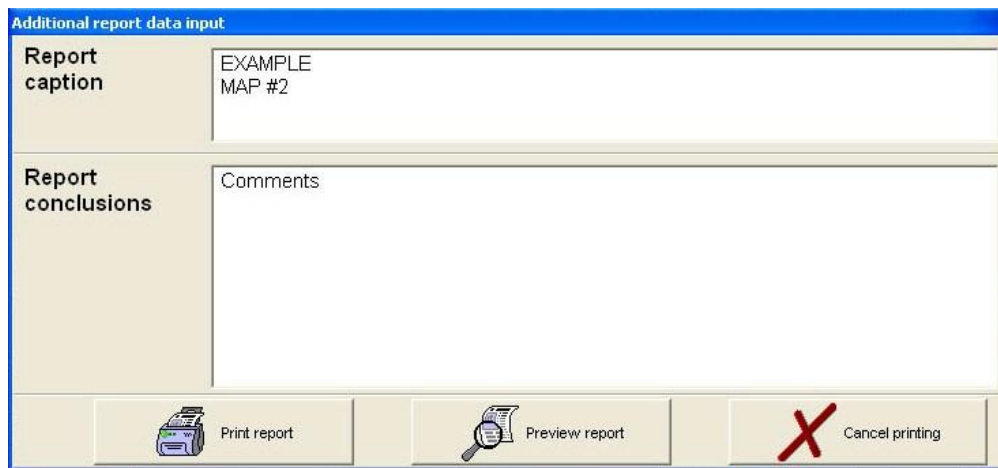


Fig.40

8.6 Report formation, viewing and printing.

PlaneVisor 3 allows to make reports for each kind of information.

Press  button in A-SCAN, BANDS and MAP modes to open window with additional report data input.(41)
MAP mode window.






Additional report data input	
Report caption	EXAMPLE MAP #2
Report conclusions	Comments
<div> Print report</div> <div> Preview report</div> <div> Cancel printing</div>	

Fig.41

In the “Report caption” area there is a configuration name and a map number.

In the “Report conclusions” area an operator may add any text information.

After entering information it is possible:

To print report immediately. Program will use connected default printer.

To preview report before printing.

To cancel printing.

8.7.1 Report previewing

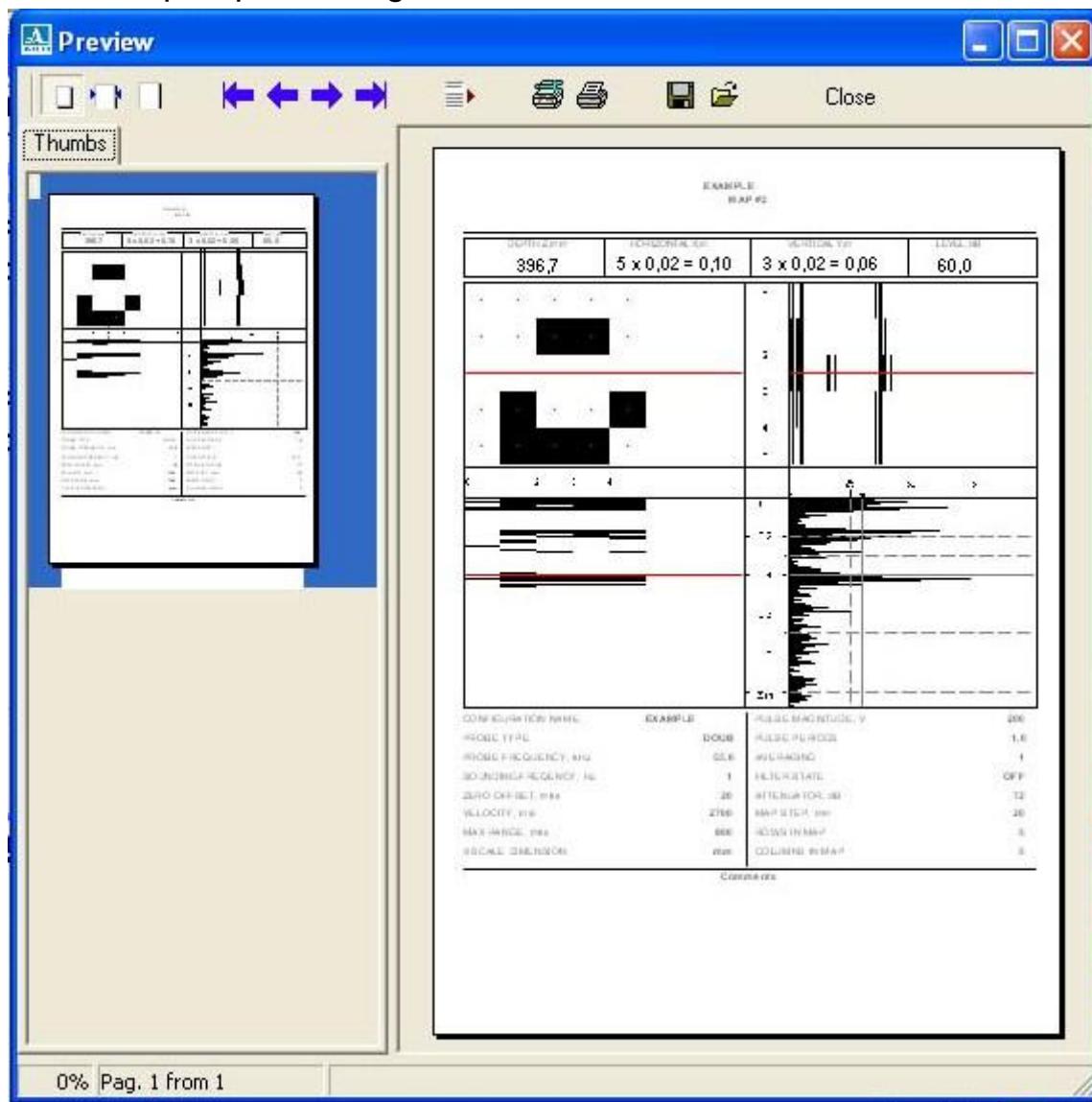


Fig.42

Buttons of the preview window:

- Look of the report:



- full screen mode;



-fit-to-wide mode;



-actual size.

Looking through the report:



PlaneVisor 3



-first page;



-next page;



-previous page;



-last page;



-select page; in the opened window an operator can put the number of the page.

Printing:



-printing setup;



-printing current report.

Save/load report:



-save prepared report;



-load prepared report;