Gnome-P

—

Portable Digital
Stereo Voice Recorder
STC-H368

—

User Guide

Speech
Technology
Center

Dear Customer,

Thank you for purchasing this product; we hope you will make the most of it.

For optimum performance and safety please read this instruction carefully.

Our developers are always ready to assist you. In case of any questions, please don't hesitate to contact us:

E-mail: support@speechpro.com

Tel: +7 (812) 325-8848

Fax: +7 (812) 327-9297

Website: http://www.speechpro.com

Please note that we are always ready to develop a customized solution for you. Any questions regarding our products and development costs should be addressed to our Sales Department:

sales@speechpro.com.

CONTENTS

INTRODUCTION

Typographic Conventions

Font	Description
Italics	Used when a *term* appears in the text first. The term meaning is explained in the same place or in the appendix. It is also applied to attract *attention* or to format *notes*.
Bold	Used for marking out construction and software **component** names, as well as **controlling unit** and **interface element** names (**headers**, **buttons** etc.).
Bold Italics	Indicates ***file names*** and ***access paths***.

Menu selection is marked with an arrow → (**Menu → Command)**, meaning you should select the **Menu first** and then click a Menu **Command**.

Indicates a link to other manuals.

Indicates important information that helps you make better use of the product.

Warns you about potentially serious issues under certain circumstances and explains you the way of avoiding them.

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1 OVERVIEW

Name	**Gnome-P**, Portable Digital Stereo Voice Recorder
Version	1.0.0
Producer	Speech Technology Center, Ltd.
Address	Russia, Saint Petersburg, Krasutskogo st. 4A, PO 196084
Telephone	7 (812) 325-88-48
Fax	7 (812) 327-92-97

Technical support:

E-mail	support@speechpro.com
Web page	www.speechpro.com

2 TECHNICAL SUPPORT

When contacting technical support, please make sure to have the following details at hand:
- Device and software version;
- Detailed issue description;
- Operating system name/version;
- Computer configuration.

3 DESTINCTIVE FEATURES AND FUNCTIONS

Gnome-P pocket digital stereo voice recorder (hereinafter, voice-recorder, recorder, device) is a professional sound recording unit providing high-quality mono and stereo speech signal recording.

The device enables high-quality speech signal recording in various environments and can be used to record conversations, meetings and interviews indoors and outdoors, even under difficult acoustic conditions.

Its extra small dimensions and intuitive user-friendly interface make it usable for a wide range of customers.

Speech signals can be recorded via built-in microphone and/or one or two external microphones as well as line input of an external audio source.

Recorded sound is stored in the integrated flash memory. Mono recording mode and data compression can be used to increase overall recording duration. Recording may be started and stopped both manually and automatically (using built-in timers and/or predefined Voice Activation threshold).

Recorded data can be copied onto other digital media via USB PC interface. Recording playback and changing recording options are available by means of a dedicated software running under Microsoft Windows 2000, XP or 7.

3.1 Compliance with Laws while Using Audio Recording Facilities

Audio files recorded with this voice recorder can be used for identification of personality and other types of expertise.

Laws and regulations related to speech recording may differ from country to country. Please consider these documents before using the device.

4 RECORDED DATA PROTECTION

To protect recorded data from unauthorized use and disclosure, main recorder's functions (recorded data playback and deleting, modifying recording options) can only be performed by means of Sound Manager software the recorder is supplied complete with.

If required, the user can protect recorded information with a digital PIN that can be enabled and modified via Sound Manager software. By default, PIN protection is disabled. Please see Subsection 10.4.3 for details.

After copying data to a PC hard drive Gnome-P enables recorded data authentication through a digital signature (see Subsection 10.5.4).

5 SCOPE OF SUPPLY

5.1 Standard Package

Title	Quantity
Gnome-P Portable Digital Stereo Voice Recorder STC-H368	1
Universal USB charger 220 V	1
USB cable	1
Microphone set with a remote control	1
Compact headphones	1
Specialized Manager software for **Gnome-Nano II** recorder	1
Operation Manual	1
Shipping box	1

5.2 Advanced Package

The Advanced Package can include the following equipment:

Title	Quantity
Line-in cable	1
Adapter for telephone line recording	1
Desk microphone, mono	1
Desk microphone, stereo	1
Pedal for controlling audio recording playback	1
Shockproof case	1

6 TECHNICAL SPECIFICATIONS

Specification		Value
Recording channel number		1 or 2
Onboard flash memory capacity		8 Gb
Recording format		mono/stereo PCM 16 bit
Data compression		2x µ-law
Sampling rate		8 or 16 kHz
Gain ripple (max)		2 dB
SNR at mic input (min)		75 dB
SNR at line input (min)		80 dB
Total Harmonic Distortion for mic input at 1kHz frequency and 16 kHz sampling rate (max)	No compression	0.1%
	2x compression	1%
Total Harmonic Distortion for line input at 1kHz frequency and 16 kHz sampling rate (max)	No compression	0.01%
	2x compression	1%
Automatic Gain Control range		0-54 dB
Voice Activation Threshold range		1-60 dB
Microphone type		Electret
Microphone sensitivity		-55 dB
Microphone noise floor (max)		28 dB
Rated voltage on mic input		8 mVeff
Rated voltage on line input		0.7 Veff
Rated voltage on output		0.7 Veff
Minimum operation time without battery recharge	Recording mode	30 hrs
	Stand-by mode	Timers	300 hrs
		Voice Activation	150 hrs
Power supply external source		5-6 V
Onboard rechargeable battery type		Li-ion
Onboard rechargeable battery capacity		750-900 mAh
Battery charging time (max)		4 hrs
Maximum recording duration (Mono mode, at 8kHz sampling rate, compressed)		298 hrs
Maximum recording duration (Stereo mode, at 16kHz sampling rate, no compression)		37.25 hrs
Current consumption in Active mode (max)		30 mA
Current consumption in Voice Activation mode (max)		3 mA
Current consumption in Stand-by mode (max)		1
PC connection standard		USB 2.0, USB 3.0
PC connection mode		High, Full-speed
Current consumption through USB (max)		450 mA
Current consumption through external power supply (max)		300 mA
Data transfer rate		800 Kbit/s
Clock deviation (max)		5 s per day
Dimensions (LxWxH)		75.3x48.7x12.9 mm
Case material		Metal
Weight (with battery)		70 g
Supported Microsoft® Windows operating systems		XP, 7, 8

7 VOICE RECORDER DESIGN

7.1 Controls and Jacks

The recorder comes in a black metal case. Recorder input and output jacks are equipped with rubber stubs fixed on the case.

Voice recorder controls and jacks are shown on Figure 1. For explanation see Table 1.
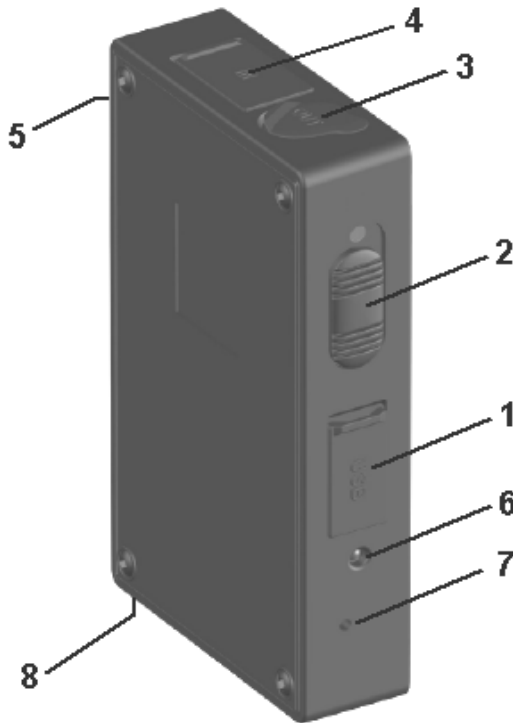

Figure 1 – Voice recorder exterior

Table 1 – Voice recorder controls and jacks:

No.	Marking	Description
1	**USB**	PC and external power supply connection jack
2	● ▫	Recording **ON/OFF** switch
3	**OUT**	Earphone jack (3.5 mm)
4	**IN**	Microphone and Remote Control jack
5		Internal microphone
6		LED status indicator
7		**Erase** button
8		**Reset** button

7.2 Flash Memory

Audio data is written to and stored on an onboard nonvolatile 8 GB NAND flash memory.

Even if the voice recorder is not powered on, all the data are stored in its flash memory for up to 10 years.

All recordings can be erased from the voice recorder memory either manually or using Gnome-P Sound Manager software (see 10.5.2).

7.3 External Microphones

Microphone set coming with voice recorder may be of two different types (see Fig. 2).

Both types include two external microphones (2) and a voice recorder remote control unit (5). The left and right microphone cables are marked with color (3), left channel cable being darker.

Microphone set is plugged into jack 4 (fig. 1) with a multi-pin plug 1 equipped with a lock preventing the set from spontaneous disconnection.

Each **Type 2** microphone is also supplied with a wire tab (4) for fastening it to clothes.
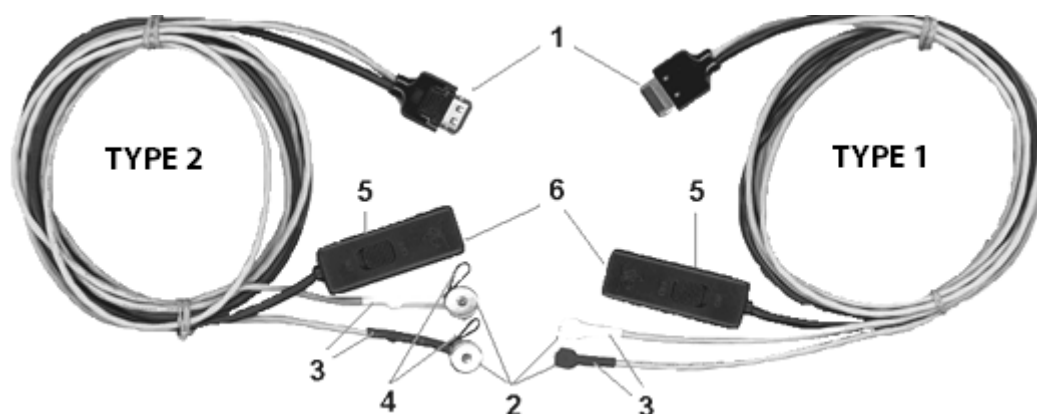

Figure 2 – External microphones

External microphones should be connected to the voice recorder to increase stereo base and recording quality.
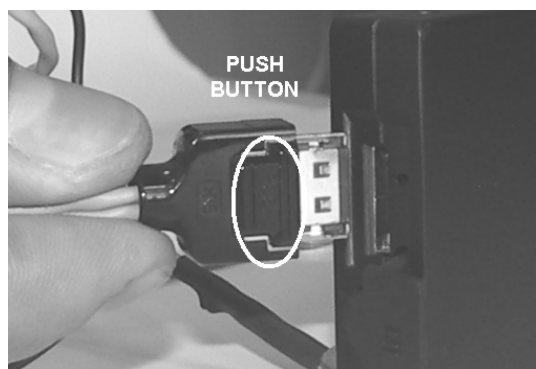

Figure 3 – Connecting cable to the voice recorder

When connecting external microphones or a PC connection cable to the voice recorder, make sure that the **PUSH** button on the plug is directed opposite to the panel with LED status indicator and the **Erase** button (fig. 3).

When disconnecting the cable from the recorder, first press the **PUSH** button on the plug and then pull out the plug.

Nonobservance of the instructions above when plugging in/out external microphones may lead to jack failure and recorder malfunction.

7.4 PC-Connection Cable

Figure 4 – PC connection cable

The recorder is connected to PC with a standard USB-to-MicroUSB cable shown on Figure 4.

7.5   Power Supply

7.5.1   Gnome-P Battery

The voice recorder is powered by an integrated Li-ion battery (750-900 mAh) used in Nokia GSM mobile phones. Power consumption in Active mode reaches 25-30 mA, while in Voice Activation mode (with input amplifiers and VA amplifier enabled) it is limited to 3 mA. Minimum power consumption amounts up to 1 mA in timer and switch-activated modes. The recorder also switches to the latter operation mode when battery charge drops below the critical value.

After approximately a year of continuous usage you might experience decreased recording time due to the battery wear-out. You can replace the battery on your own using guidelines provided by Speech Technology Center technical support.

7.5.2   Battery Charge

The recorder battery is charged through an external power source (AC/DC 220V/5V or PC USB port). Maximum battery charge current is 300 mA; full charge may take up to 4 hours.

Please note that when charging the recorder through PC USB port, in case the current supplied through the port is lower than expected or several devices are connected to a single port, you may experience temporary connectivity issues.

The red LED (**6** on figure 1) will light up and remain on continuously until the battery is fully charged. After that the charge process will automatically terminate and the LED indicator will go down.

In case the charger is not unplugged, after certain battery discharge (or if the battery is not fully charged) additional charge will start automatically. In case the external power supply is powered on and off cyclically, an attempt to start additional charge will be performed.

> Before using your recorder for the first time after purchase or after the recorder has not been used for an extended period, we strictly recommend you to charge the battery during at least 2 hours.
>
> For the first 20 minutes, LED indicator may not light up, and PC may not detect the voice-recorder.
>
> In this case, you should wait for 20 minutes, then, if the indicator does not light up, disconnect and connect again power supply. In some cases, it must be done up to three times. If, nevertheless, the LED indicator still does not light up, please contact our technical support.

> To prevent battery failure due to over-discharging, follow these simple rules:
>
> – If you do not use Gnome-P for an extended period of time, fully charge the battery at least once a month;
>
> – Recharge the battery after each intensive recording session.

8 OPERATING GNOME-P

8.1 Gnome-P Operational Modes

Gnome-P can be in one of the two operational states – standby or active.

Voice recorder comes complete with an integrated fully charged battery, so that you can get started immediately.

In active mode the voice recorder can only perform data recording, playback and deletion. Recording can be started/stopped by setting the ON/OFF switch (2 in Figure 1) to an appropriate position. This is accompanied by the LED indicator blinking once.

Once enabled, Gnome-P starts recording with the following default settings:

- Mono recording;
- 16 kHz sampling rate;
- No compression;
- 36 dB input gain level (manual);
- Signal input via left channel internal microphone;
- Record switch blocked;
- PIN code not enabled, date/time not set.

8.2 Getting Started

Before using Gnome-P for recording, please do the following:

- Connect Gnome-P to a PC using PC connection cable and install the driver from the installation CD (see 7.4).
- Install Gnome-P driver on your PC.
- Run Gnome-P Manager software (see 8.2).
- Set current date/time and recording options according to recording conditions (see Subsection 10.4).
- Enable and enter a PIN to protect Gnome-P settings from unauthorized access, if required (see Subsection 10.4.3).
- Plug in external microphone, if required (see Subsection 7.3).

> ⊘ Before connecting the voice recorder to a PC, make sure the PC case is effectively grounded. Grounding is strictly recommended if you intend to connect your voice recorder to a PC and an external signal source at the same time.

> ⊘ It is not recommended to connect multiple Gnome-P voice recorders to a PC at a time. Before connecting the second voice recorder you should disconnect the first one.

8.3 Recording

8.3.1 Recording hints

The voice can be recorded in PCM 16 bit format without compression or with A-law or μ-law compression.

To obtain high-quality audio recording we recommend you to follow these guidelines.

> You are not recommended to record audio while the voice recorder is connected to the computer's USB port. In this case, the recorder disconnects from PC and the recorded audio will be saved into the recorder's internal memory. Because of the computer interference of 5 V, the audio recording can be of bad quality.

For the recorder's power supply use a power adapter provided by the manufacturer.

Use stereo recording without compression at 16 kHz sampling rate if possible. Stereo recording provides speech intelligibility even in noisy conditions.

Mono recording allows you to record longer sound signals.

To prevent useful signal loss, use Voice Activation (VA) mode only if input signal level is stable.

Place microphones as close to the useful signal (speech) source as possible (but not closer than 15 cm) and as far from the acoustic and electromagnetic noise sources as possible. The closer the microphones are placed to the acoustic signal (speech) source, the smaller is reverberation (echo) and the higher is the gain level and speech intelligibility.

External microphones are more sensitive and at the same time can be easily concealed (under a jacket lapel, shirt collar, on the cuff). During stereo recording external microphones should be placed at least 15 cm from each other.

Try to place the microphones in such a way as to avoid vibration, impact and rubbing against other surfaces.

Avoid permanent contact of the voice-recorder box or external microphones with rough surfaces (such as table plate, car, concrete structures etc.).

Note that if mono recording is enabled, only left channel data will be recorded.

To conceal the sound recording process and/or avoid record suppression by special devices (HF generators) it is advisable to use the internal microphone.

8.3.2 Manual Start/Stop Recording Mode

The recording process can be started/stopped both manually and automatically.

To start recording, move the **ON**/**OFF** switch **2** (fig. 1) into the ● – **REC** position or the remote control switch into the **ON** position.

To stop recording, move back either the **ON/OFF** switch **2** (fig. 1) into the ◻ - **STOP** position or a remote control switch into the **OFF** position.

The remote control doubles the positions of the **ON**/**OFF** switch **2**. See the description of their work in the table below.

The remote control position (fig. 1)	Position of the switch **2** position (fig. 1)	Recording mode
ON	REC	Recording
ON	STOP	Recording
OFF	REC	Recording
OFF	STOP	Recording Stop

8.3.3   Voice Activated recording

To perform voice activated recording:

– Enable Voice Activation mode in the Record settings window of the Sound Manager Gnome-P software (see 10.4) and specify the required VA start/stop threshold, then set the switch on the recorder body (**2** in fig. 1) or on the remote control unit to the ON position;

– Move the recording ON/OFF switch into the ● - **REC** position (2 in fig. 1) or the remote control switch into the **ON** position.

Recording session will begin after the input signal level exceeds the specified VA start/stop threshold, and stop in a defined period after the signal level falls below threshold value. Every time when the recording started or finished, you'll see the LED **6** switching on (fig. 1).

To stop the voice activated recording manually, move the recording ON/OFF switch into the ☐ – **STOP** position or the remote control switch to the **OFF** position.

The Voice Activation recording mode can be used in combination with scheduled recording mode (see 8.3.4).

8.3.4   Scheduled Recording Mode

Use scheduled recording mode in cases when the exact start and stop time of a recording session (for meetings, press-conferences etc.) is known beforehand, and when a recording session cannot be started manually or by voice activation.

This mode permits starting a recording session automatically at any desired time by using built-in timers. The timers allow you to schedule up to 5 recording sessions. Also you can set recurrent recording sessions on weekdays and weekends, by start and stop time of the recording session.

To record sound in the scheduled recording mode (see 10.4):

– Activate one or several timers

– Set the desired start and stop time for each recording session and, if necessary, make them recurrent.

Note that the user's commands usually have higher priority than the timer settings, so you can stop the session manually. Thus, to stop a scheduled recording session (on condition that the recording ON/OFF switch is NOT disabled through the software), move the recording ON/OFF switch (2 in fig. 1) into the **REC** position and then immediately move the switch back into the **STOP**, or move the remote control switch into the **ON** position and then immediately move it back into the **OFF** position.

If the manual recording ON/OFF switch is disabled, the recording cannot be stopped manually. Thus the scheduled recording can be stopped if the set stop time is reached, when the recorder's memory is overfilled or when the recorder's battery is discharged. This function allows avoiding to stop the recording by accident while documenting any important event and thus it prevents from losing any important information.

Scheduled recording mode can be used in combination with the Voice Activation recording mode (see 8.3.3).

> When Voice Activation and scheduled recording modes are used simultaneously (both are on at the same time), note that recording session will only start if during the time period specified by the timer settings the signal level exceeds the set VOX start/stop threshold.

8.3.5   Loop Recording Mode

In the loop recording mode, audio is recorded into a specified flash memory segment. Once this segment is full, the data recorded in the very beginning of the recording session will start being replaced with the new data. The **Loop length** parameter is specified as hh:mm (see 10.4).

Loop recording can be used in combination with any other recording mode.

8.3.6 Maximum Recording Duration

Recording duration depends on the parameter settings and available memory size. Approximate recording times for different recording modes with maximum memory space available are given in Table.

Recording mode	Recording duration in hours	
	16 kHz	8 kHz
μ-Law 8-bit, mono	149	298
μ-Law 8-bit, stereo	74,5	149
PCM 16-bit, mono	74,5	149
PCM 16-bit, stereo	37,25	74,5

> Keep in mind that long recordings (more than 2 GB) will be automatically divided into two files. The maximum size of a single file is 2 GB.

8.4 Playing Back and Deleting Audio Files

Playing back and deleting the recordings saved in the recorder's memory can be realized both with the recorder's software and with the recorder itself.

Recordings can be played or deleted from the flash memory using either the voice recorder or the Sound Manager Gnome-P software. Playback and deleting by means of Sound Manager Gnome P software are described in section 10.5.

For playing back or deleting the recordings with the multi-function button (**7** in fig. 1), assign it the corresponding function with the recorder's software (see 10.4).

You can play only the last recording from the flash memory.

By default, the multi-function button is disabled.

8.4.1 Playback

If playback function is selected, then to play the last recording stored at the flash memory, plug earphones in the respective jack at the voice recorder case and press the erase button (**7** in Figure 1). To stop playback press the button again.

8.4.2 Deleting Audio Files

If erase function is selected, then to quickly erase all recordings from the voice recorder memory, press the voice recorder erase button (**7** in Figure 1) and hold it down for about 3 seconds. The red LED (**6** in Figure 1) will light up and will be on continuously until the deletion process is over. All recordings will be removed from the voice recorder memory.

> Information deleted from the recorder's flash memory cannot be recovered.

8.5 RESET Button

Use the **RESET** button **8** (fig. 1) in case your voice recorder becomes inaccessible via the software or does not respond to the user's manual commands. The **RESET** button is placed inside a hole, so it can be pressed only by means of a thin pointed object.

Device reset does not affect recorded data or voice recorder settings.

9   VOICE RECORDER SOFTWARE

9.1   Gnome-P Software Kit and Its Functions

The software kit that comes with the voice recorder includes Gnome-P device drivers and **Sound Manager** software.

9.1.1   Sound Manager Software

Gnome-P Sound Manager software enables the following:

- Viewing voice recorder information (serial number, available memory size, battery level etc.).
- Setting recording options (recording format, signal source, gain level etc.).
- Viewing the list of available recordings and performing standard set of operations (playback, deleting and copying to disk).

> Before running Sound Manager software, make sure the recording mode is not enabled. Start recording (via Voice Activation mode, on schedule or manually) only after terminating the program.

9.1.2   System Requirements

The minimal system requirements for the recorder software are:

- PC with single or multiple USB ports and a CD drive;
- CPU: Intel Pentium III or higher;
- RAM: 256 MB or more;
- Microsoft® Windows XP/7/8
- Audio I/O sound card;
- Windows built-in software for playing back wav files;
- Keyboard, mouse;
- At least 8 GB of free hard disk space to store recorded data is recommended.

9.2   Software Installation

Most recorder functions may be performed with a PC and specialized software only.

9.2.1   Driver Installation

To start working with **Sound Manager** software, you must install the voice recorder driver supplied on CD.

> Only the user with administrator rights can install the driver.
>
> The driver installation should be performed with no PIN enabled on the recoder. Before installing the drivers, make sure the recorder is not protected with a PIN.

Connect Gnome-P recorder to a PC using the USB-cable and insert the installation disk into the drive.

A new device (Gnome-P) will appear in the **Other devices** category in the **Windows Device Manager.**

To launch **Device Manager**, click **Control Panel** from the 🔵 Start menu. In the **Control Panel** window click **Device Manager**.

There are *amd64* for 64-bit systems and *i386* for 32-bit systems in the ***Drivers*** folder on the installation CD. Please select the driver that conforms to your PC OS capacity from the installation disk (Figure 5).

> This step must be taken with special attention!
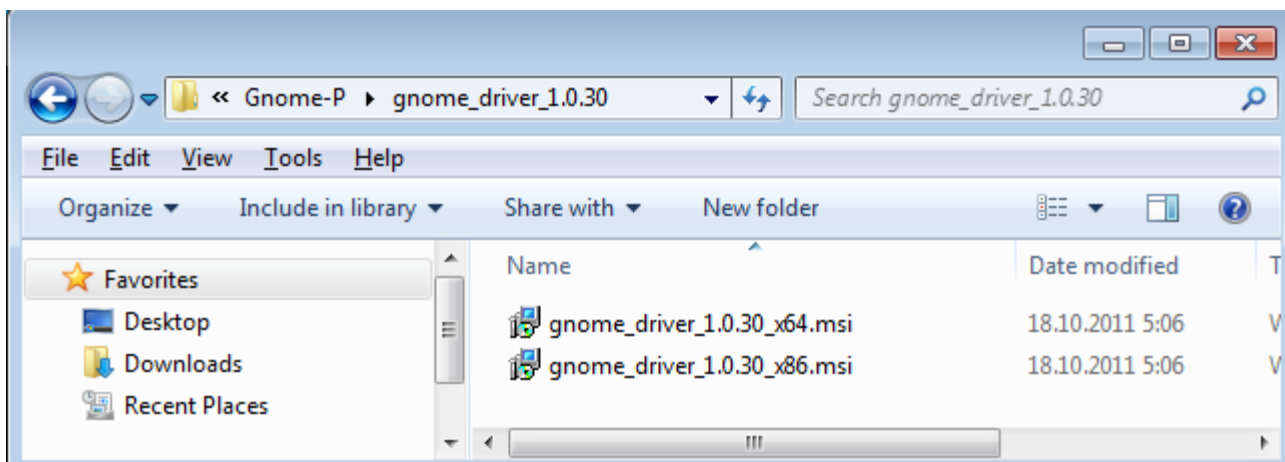
Figure 5 – Gnome-P drivers in the installation disk

STC Gnome-P driver will be installed onto your PC (Figure 6).
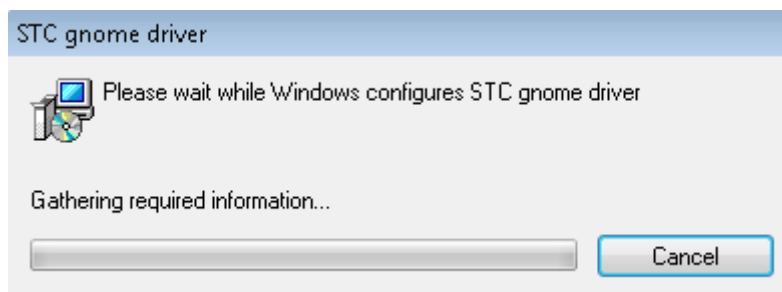
Figure 6 – Driver installation window

After installation you should restart your system for the configuration changes to take effect. Click **Yes** to restart (Figure 7).
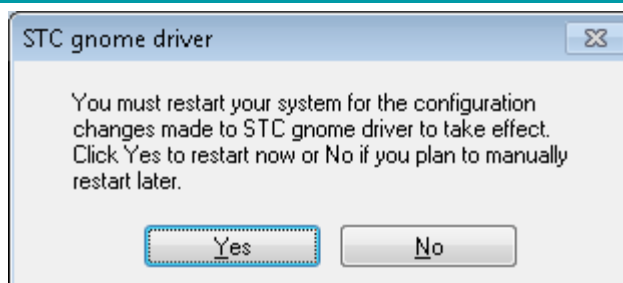
Figure 7 – **STC gnome driver** dialog box

After successful driver installation, the recorder will appear as the **GNOME-P Portable recorder** in the **Universal Serial Bus controllers** category or the **USB controllers** category in **Device Manager**.

Driver installation process is completed; you should install **Gnome-P Sound Manager** software.

9.2.2   Sound Manager Software Installation

Installation of general and special software, which are in the delivery Gnome-P set, is performed by a complex installer. To install the Gnome-P Sound Manager software, run the **Setup.exe** file located in the root directory on the distribution disk.

The distribution disk contains the additional software components. The Setup Wizard will automatically determine their availability on the computer and if one of them lacks, the program offers to install it (Fig. 8).

If any program has already been installed, it doesn't need to be reinstalled and the previously installed components will not be displayed.

Click the **Install** button to proceed (Figure 8). Installation procedure starts.
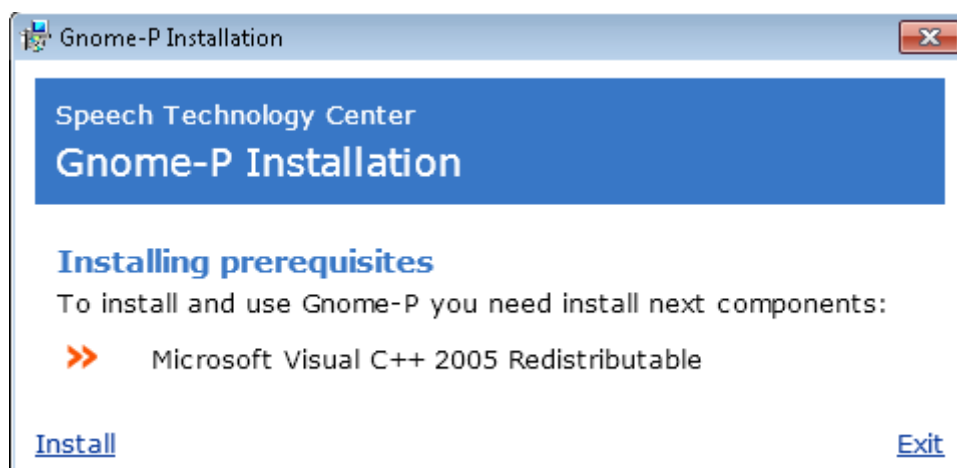
Figure 8 – Installing prerequisites window

If the additional software components have been already installed, the main window of the custom installation software will appear. Click the **Gnome-P Installation** option (Figure 9).
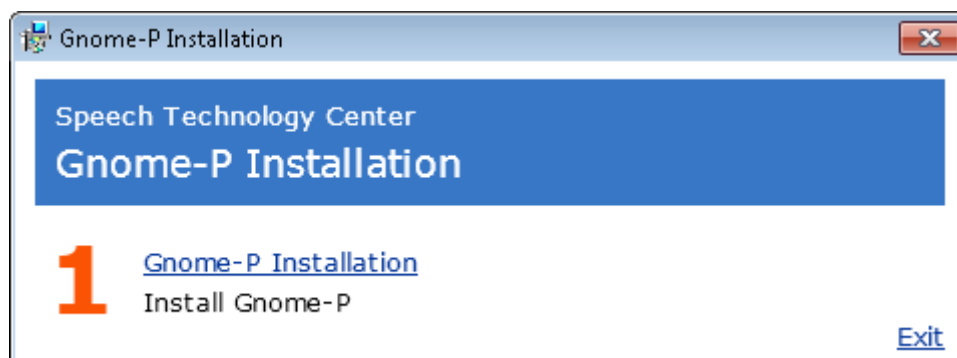

Figure 9 – Installation Wizard main window

On the welcome screen (Figure **10**) click **Next>** and follow instructions of the Installation Wizard appearing on the screen.
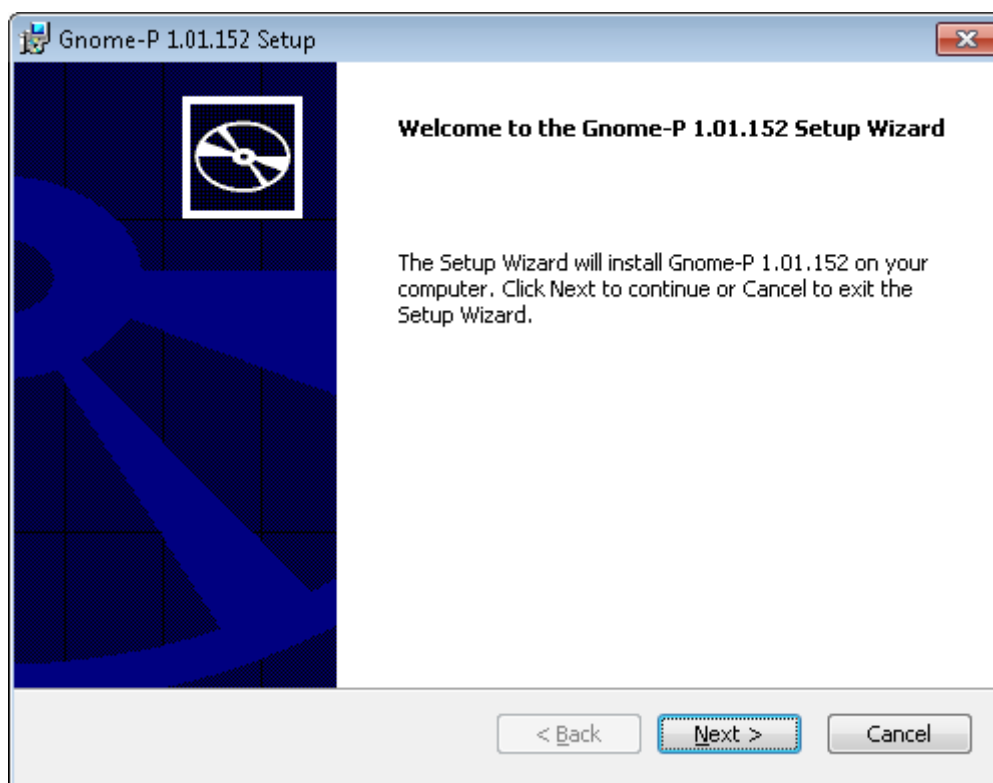

Figure 10 – Welcome Screen

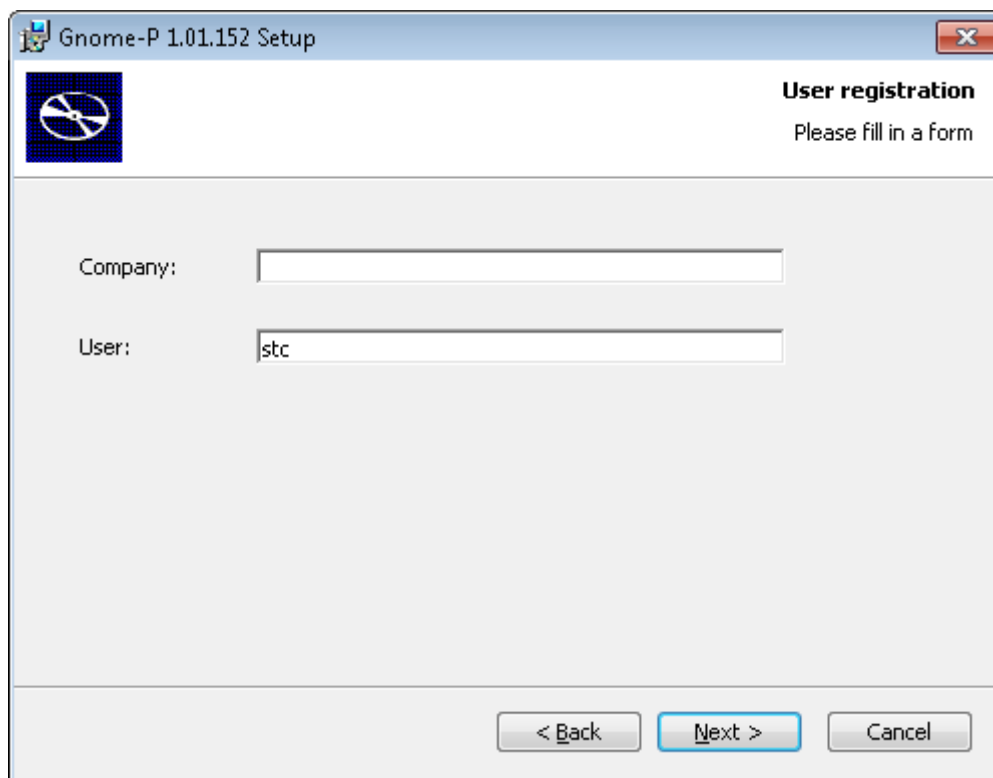Enter user details click **Next>** (Fig. 11).

Figure 11 – User Registration

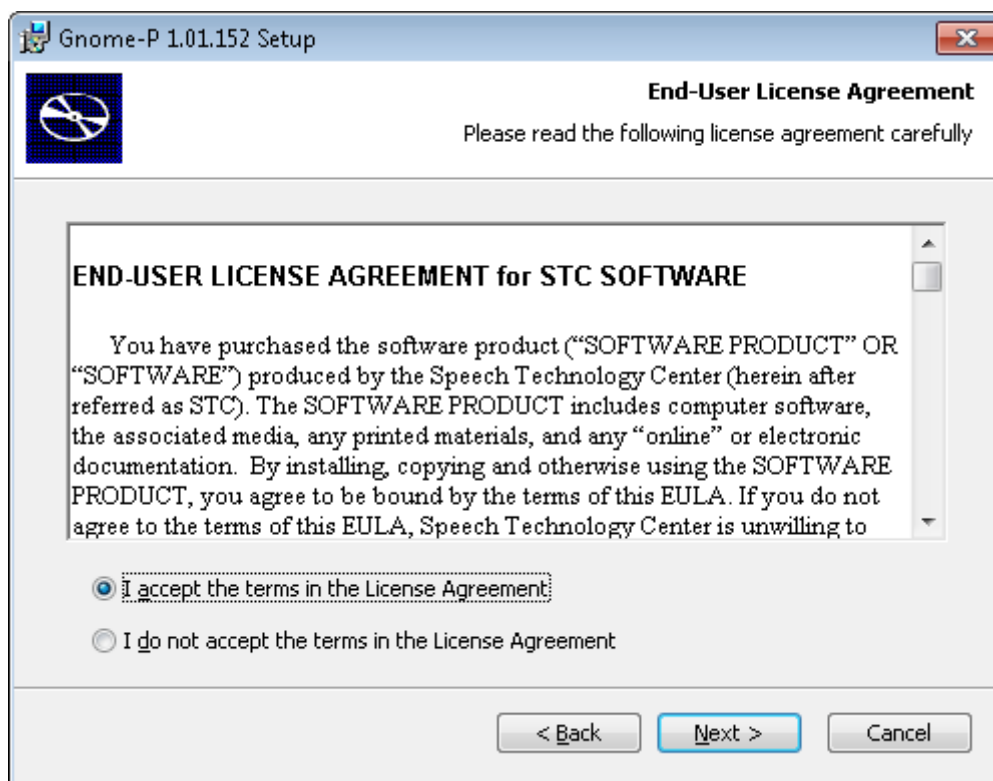Read the license agreement, select "I accept the terms in the License Agreement" and click **Next>** (Fig. 12).

Figure 12 – End-User License Agreement" window

Select the **Sound manager** component to be installed on a PC by clicking on the icon in the component tree (Fig. 13).

If necessary, change the path location of the program file using the **Browse...** button.

Click the **Disk Usage** button to show the information about free space on hard disks.

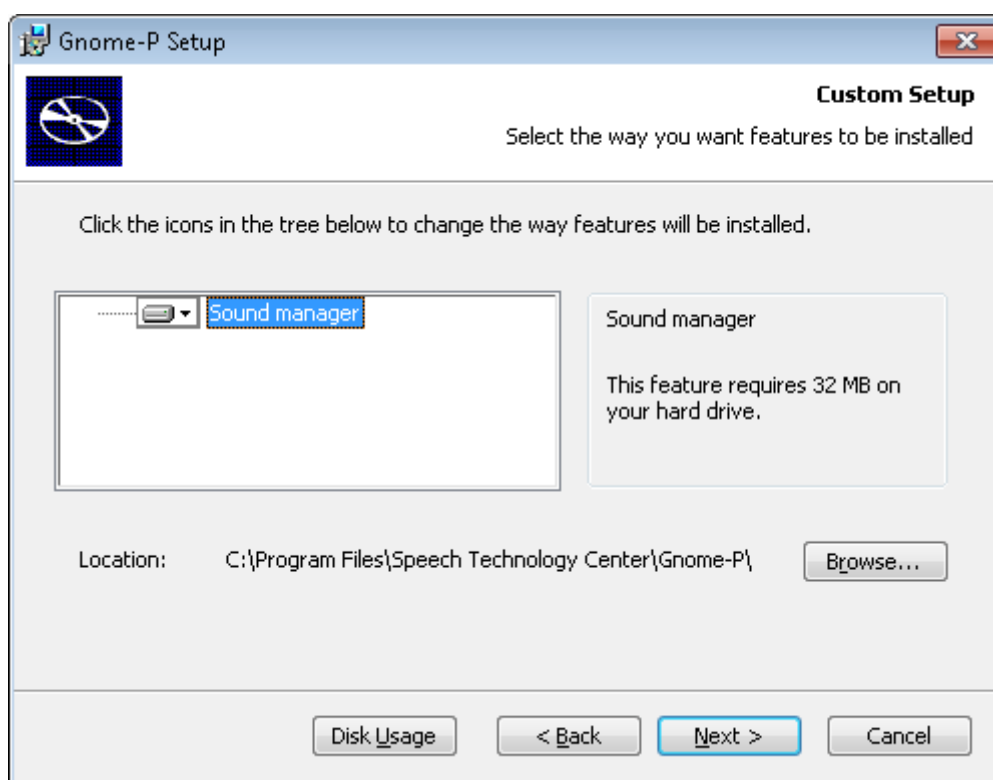Click **Next>** to proceed (Fig. 13).

Figure 13 – Custom Setup dialog box

If necessary, create a program shortcut on the desktop and/or in the Program menu for further quick start options and click **Next>** (Fig. 14).
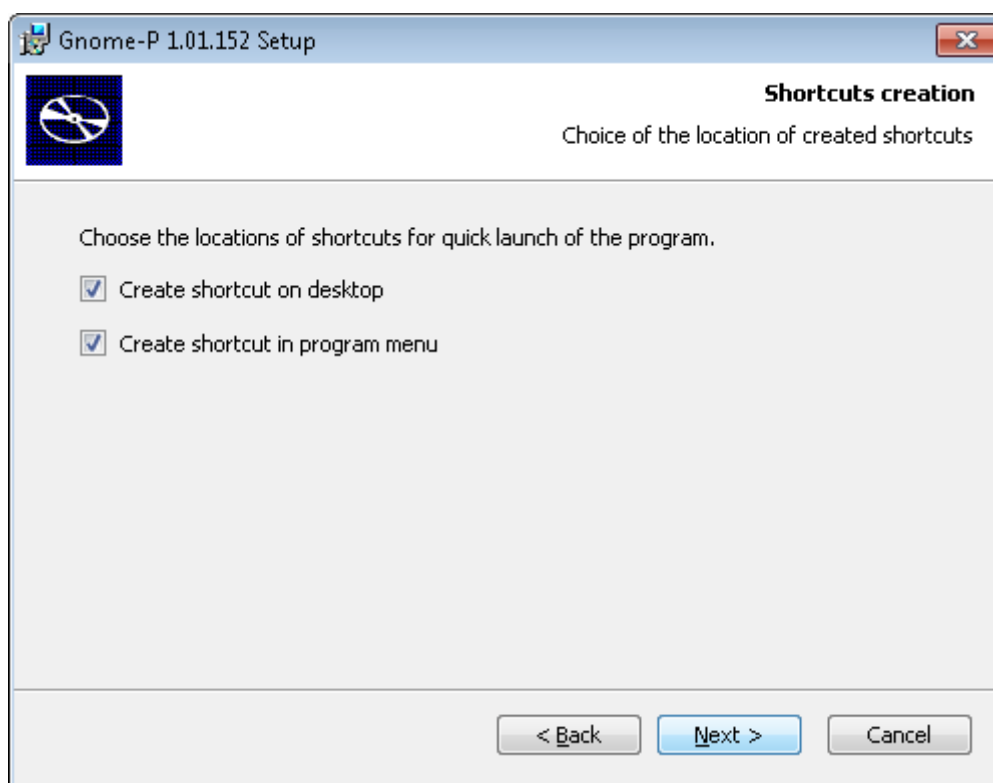

Figure 14 – Creating Shortcut dialog box

Review the installation settings. If you want to change them, click the ◁**Back** button. To start installing the software on your PC, click **Install** (Figure 15).
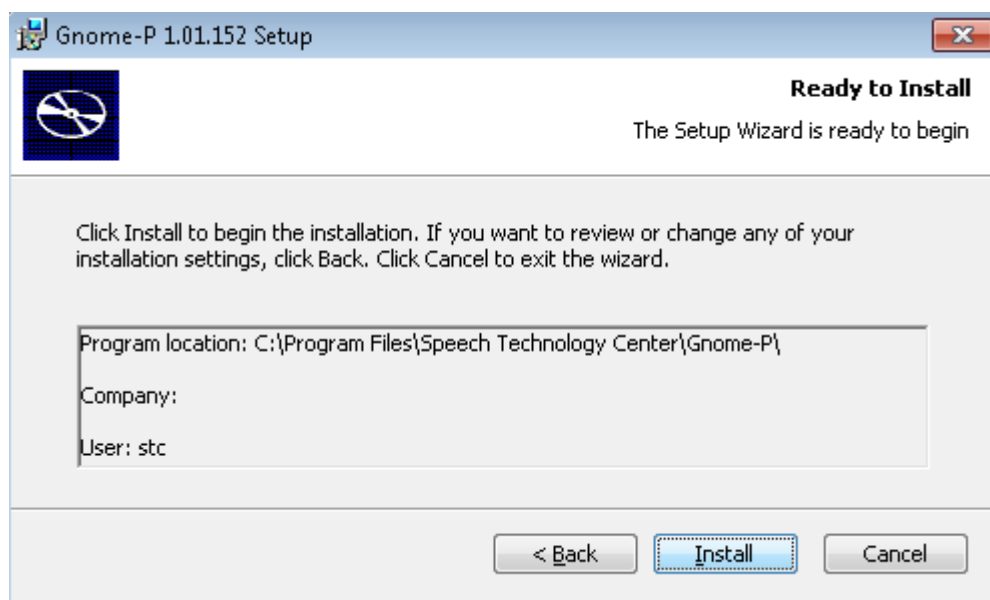

Figure 15 – Ready to Install dialog box

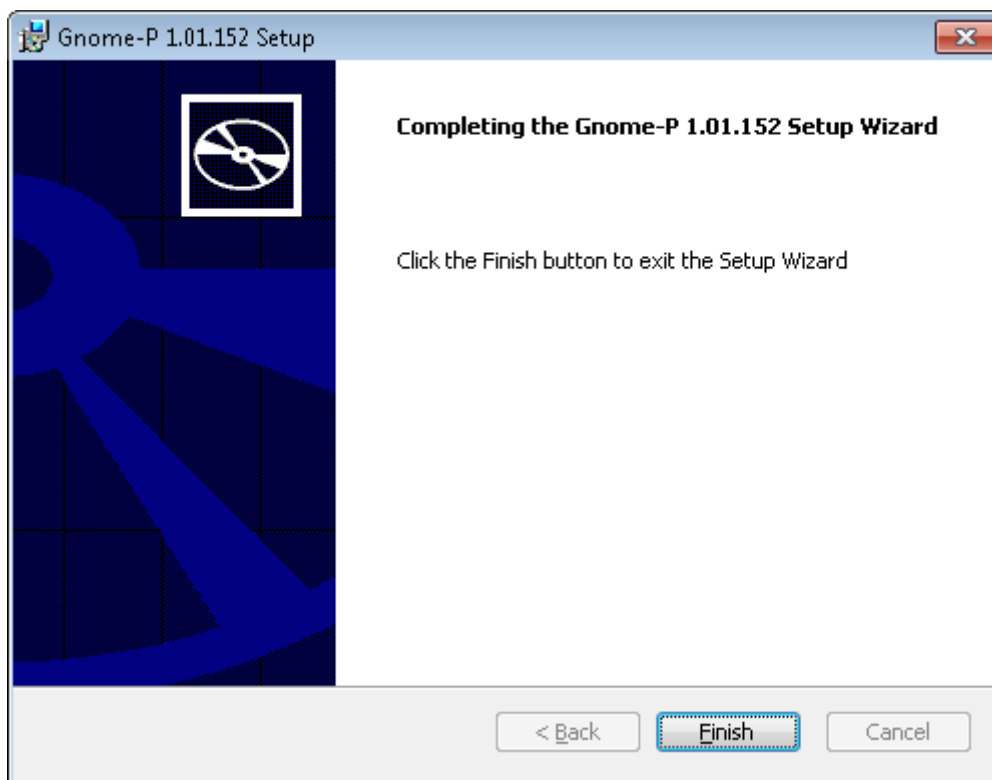To complete the installation program, click **Finish** (Figure 16).

Figure 16– "Completing Gnome-P Setup Wizard dialog box

When the installation process is complete, the main installation window will open saying **Gnome-P is already installed** (Figure 17).
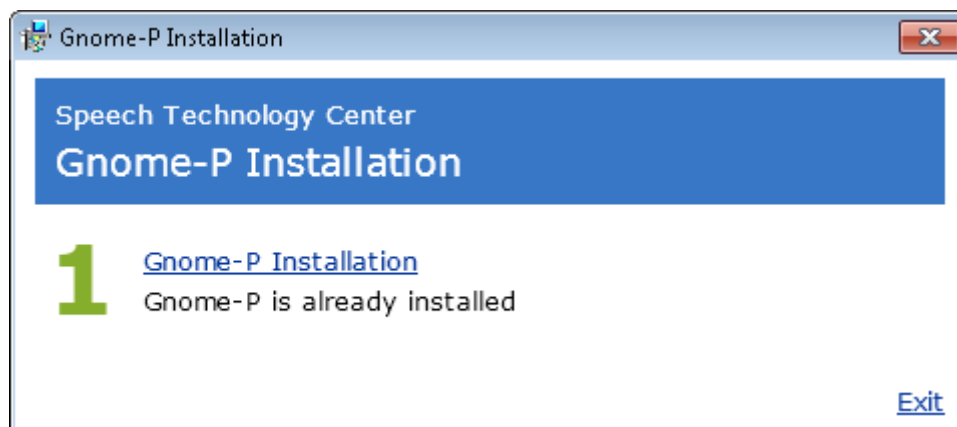
Click **Exit** to exit the Setup Wizard.

Figure 17 – Main installation window of Gnome-P

10 SOUND MANAGER SOFTWARE

10.1 Running the Application

To run Gnome-P software select its entry in the **Start** menu (by default it is installed in the Speech Technology Center group).

10.2 Sound Manager Gnome P main window

Application main window (Fig. 18) consists of a header (**1**), a main menu string (**2**) and three operating areas:

3 – Recordings

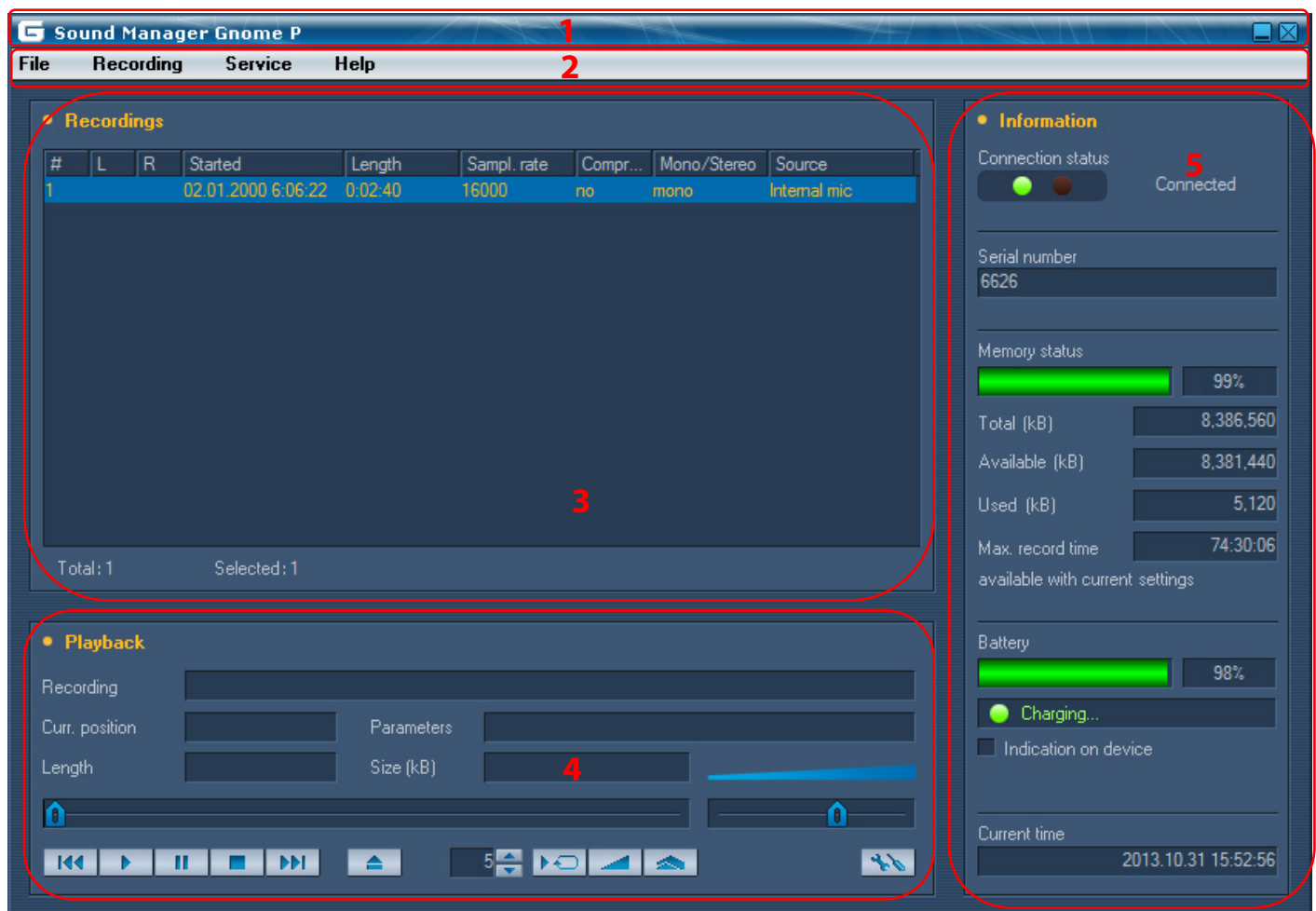**4 – Playback**

5 – Information

Figure 18 –Sound Manager main window. Overview area

10.2.1 Recording List Area

The main window working area contains a list of recordings with their basic attributes:

– recording number (**№**);

– loop mode applied (**L**);

– recording activation method (**R**): manual (empty field), scheduled by timers (**T**), Voice Activated (**A**);

– recording start time;

– recording duration;

– sampling rate;

– compression (μ-law);

– mono/stereo recording;

– serial number of the voice recorder used.

> There is the difference between current recording and selected recording in the recording list. Current recording is orange colour marked.
>
> The **Playback** group-box in the lower part of the main window displays current recording parameters. It also contains current recording playback controls. Other Sound Manager Gnome P functions relate to the selected recording.

If you do not need to load all the recordings from the voice recorder, you may use the **Recording → From oldest** command (records list begins from oldest recordings) or the **Recording →From newest** command (records list begins from newest recordings). When all required recordings are loaded just press **Cancel** to stop loading (Figure 19).
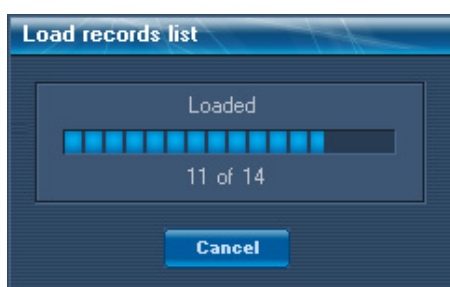

Figure 19 – The records list loading window

10.2.2 Information Area

The right part of the window is taken up by the **Information** group-box (Fig. 18, **5**) containing the following data:

– PC connection status;

– voice recorder serial number;

– total memory capacity;

– available memory size;

– maximum recording duration with current settings;

– integrated battery charge level;

– voice recorder current time.

Checking **Recorder indication** checkbox enables battery state of charge indication on the recorder itself, without connecting it to PC. In this case, when starting recording process manually (toggling switch **2** position (see Fig. 1) to ● – **REC**), the red LED **6** (см. Fig. 1) will blink certain number of times, depending on the battery state of charge. Blinking signal legend is detailed in the following table:

Charge percentage	Number of blinking signals
Less than 25%	1
25-49%	2
50-74%	3
75-98%	4
99-100%	5

In case recording is activated by timer, voice or remote control, the LED will blink once, irrespective of the checkbox being checked.

In case **Recorder indication** checkbox is not checked, the red LED **6** (see Fig. 1) will blink once, irrespective of the state of charge, upon powering on the recorder.

10.2.3 Playback Area

Playback area **4** (Fig. 18) is located in the lower part of the main window and includes the following objects:

– **Recording** string shows the details of the audio file selected for playback: its number in the list and recording start date and time.

– **Position** string indicates current audio file playback position in hh:mm:ss format.

– **Duration** string shows audio file duration in hh:mm:ss format.

– **Format** string shows sampling rate, current recording mode and recording law.

– **Size (Kb)** string displays the size of the audio file being played;

– Slider for finding current playback position;

– Volume slider;

– Playback control buttons:

	– Previous recording;
	– Play;
	– Pause;
	– Stop current recording;
	– Next recording
	– This button allows you to play an audio file stored on the hard drive.
	– This area allows you to specify loop playback duration in seconds.
	– This button enables/disables loop playback mode.
	– Enables/disables AGC
	– Enables/disables denoising
	– Opens **Player Options** dialog

10.3   Application Main Menu

Application main menu string **2** (Fig. 18) includes the following commands: **File, Recording, Service, Language** and **Help**. Each command is described in details below.

10.3.1   File Menu
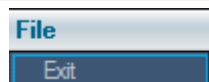
File
| Exit |

Figure 20 – File menu

File menu has only one command which is **Exit** that closes the main window and terminates the application.

10.3.2   Recording Menu

Recording
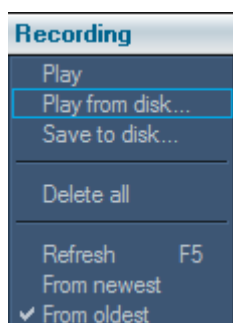| Play |
| Play from disk... |
| Save to disk... |
| Delete all |
| Refresh   F5 |
| From newest |
| ✔ From oldest |

Figure 21 – Recording menu

Recording menu includes the same commands as those in **Recording list** popup menu, which are the following:

Play: Plays the recoding selected in the **Recording list**.

Play from disk: Plays a *WAV* file stored on PC hard drive when the recorder is connected to a PC.

Save to disk: Copies audio files from recorder onboard memory to PC hard drive.

Delete all: Deletes all recordings from the recorder memory.

Refresh: Refreshes the recording list to display recently added recordings.

From newest: Displays recordings historically, starting from the newest ones.

From oldest: Displays recordings historically, starting from the oldest ones.

10.3.3   Service Menu

Service
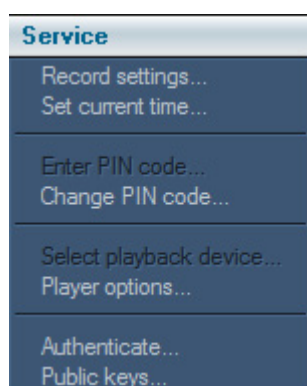| Record settings... |
| Set current time... |
| Enter PIN code... |
| Change PIN code... |
| Select playback device... |
| Player options... |
| Authenticate... |
| Public keys... |

Figure 22 – Service Menu

Service menu consists of the following commands:

Record Settings: Displays **Record Settings** window (Fig. 26) which allows you to set any recording options or restore default settings.

Set current time: Allows you to set or to change recorder time.

Enter PIN code: Allows you to enter the PIN and start working with the sofware.

Change PIN code: Allows you to set or change the PIN.

Playback devices: Allows you to select the device required for playback.

Player options: Allows you to choose options for audio file playback.

Authenticate: Allows you to verify the recording.

Public keys: Allows you to obtain a public key for an audio file that will be used for further recording verification.

10.3.4   Help Menu

Figure 23 – **About** window
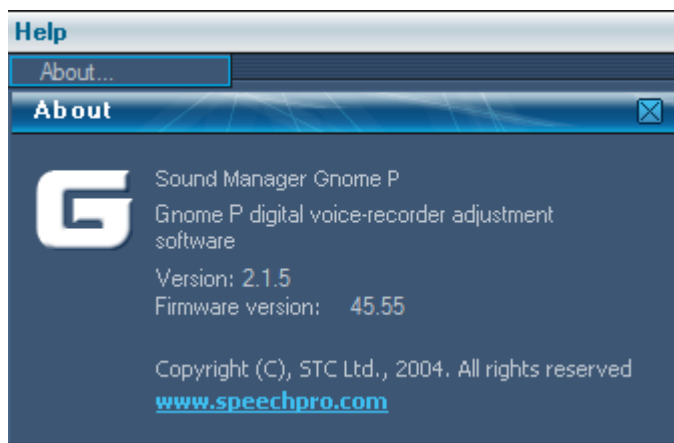
The only command **Help** menu has is **About** which opens the same-name window (Fig. 23).

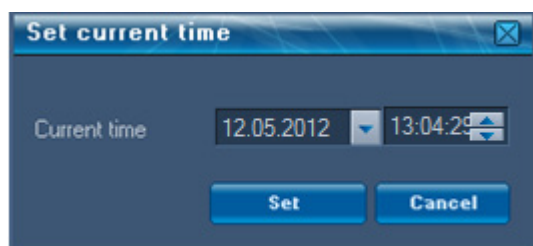## 10.4   Configuring Gnome-P

10.4.1   Setting Date and Time

Figure 24 – Setting current date and time

To set or change voice recorder time use the **Service →
Set current time** command. In the displayed window
(Figure 24) set current date and time (year, day, month,
hours, minutes, seconds) and press **Set**.

10.4.2   Configuring Recording Options

To set (change) other voice recorder parameters select **Service → Record Settings.** The Record Settings
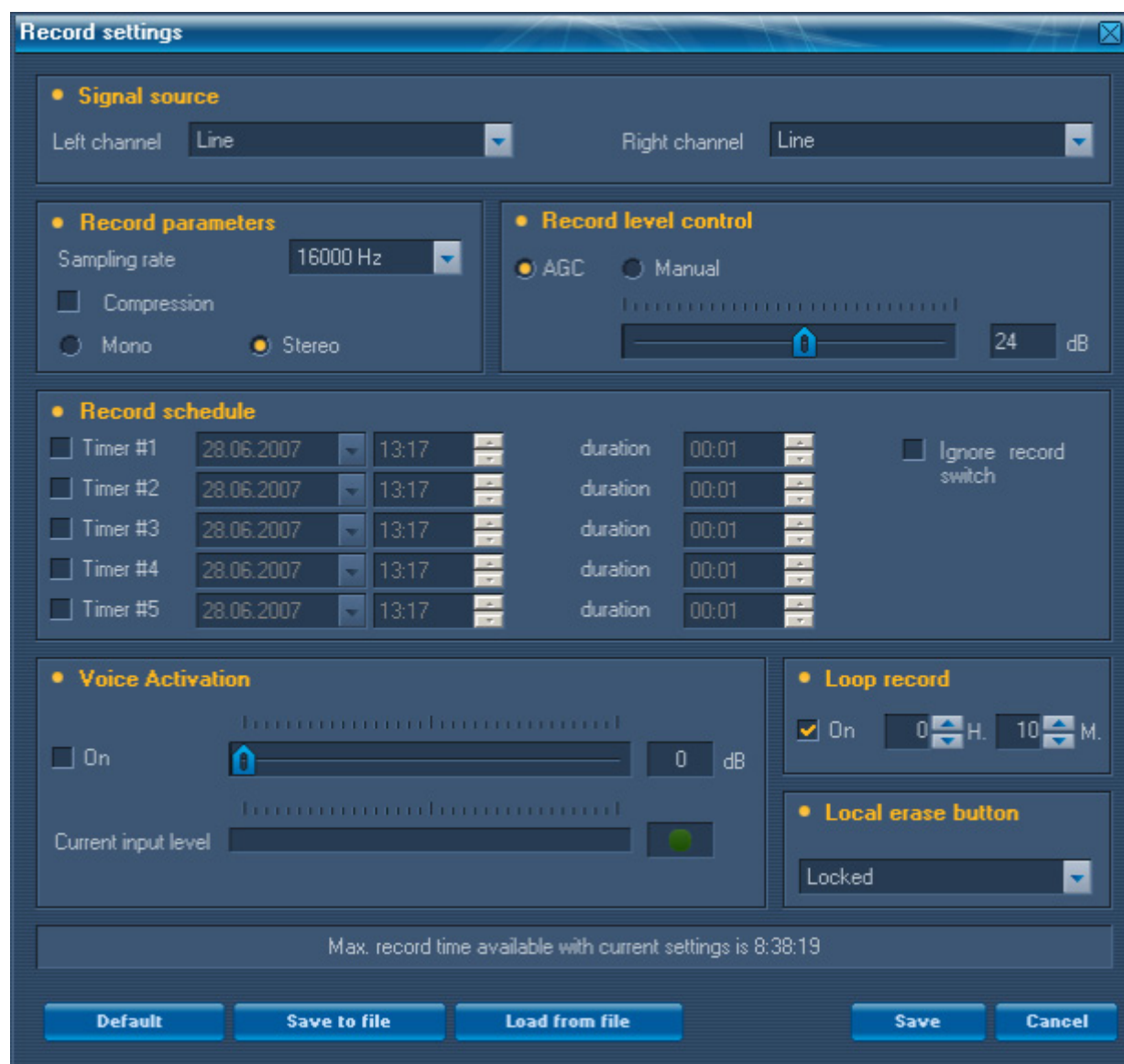window will show up (see Figure 26).

Figure 25 – Record Settings window

In the **Signal source** group-box select signal source types for the right and the left channels. Stereo signal is
recorded from both channels, while for mono recording only the left channel is used. The following signal
source types can be selected:

- none;
- internal microphone;

- external microphone;
- line input.

In the **Record parameters** group-box select the desired sampling rate (8000 or 16000 Hz), mono/stereo mode and tick Compression if you wish to use compression.

The **Record level control** group-box allows you to choose the way to control signal gain level: automatic (AGC) or manual. In the manual mode drag the slider to set the desired gain level. You can disable gain control by dragging the slider to the leftmost position.

Scheduled recording is controlled by timers (1 to 5) which can be enabled in the **Record schedule** group-box. Tick the desired timer(s) and specify recording start time (date:month:year, hours:minutes) and duration time (hours:minutes). The minimum interval between successive recording sessions should be 1 minute. To prevent manual recording interruption by the voice recorder switch, tick **Ignore record switch**. In this case scheduled recording cannot be stopped manually.

> It is impossible to set a missing (past) start time on the timers.

The **Voice Activation** group-box allows you to enable automatic recording start at a preset sound level (VA threshold). This threshold can be set within the 0…60 dB range; the minimum step is 2 dB. Current input level indicator displayed below can be used for reference.

The **Loop record** group-box is used to enable loop record mode and set the desired loop length (hours:minutes). When the set time period has elapsed, new data will be recorded over previous recordings. Thus, regardless of the overall recording session duration, the amount of actually recorded data will correspond to the specified loop length.

> Maximum time for **Loop record** mode amounts up to 74 hrs 59 min.

In the **Local erase button group-box** the following functions can be assigned to the voice recorder erase button (**7** in Figure 1):

- **Use for playback**;
- **Use for erase**;
- **Locked**.

To save current settings in a separate file on the PC hard drive use the **Save to file** button. To restore previously saved settings press **Load from file**.

Maximum recording duration with current settings (hours:minutes:seconds) is displayed in the lower part of the window.

To put newly set parameters into effect, press **Save**. To discard all changes press **Cancel**.

Pressing the **Default** button at the low left will restore the default settings.

In case any option is modified, the change is immediately displayed in the main window (см. Fig. 18).

> All settings except date and time are stored in the voice recorder memory regardless of the power supply status.
>
> If the voice recorder was disconnected from the internal power supply (battery) for more than one minute, date and time are to be set anew.

10.4.3 Setting and Changing a PIN for Gnome-P Functions

If desired, the user can set a PIN-code protection of voice recorder functions.

To set a PIN code, select **Service → Change PIN code**. The following window will be displayed (Fig. 27).
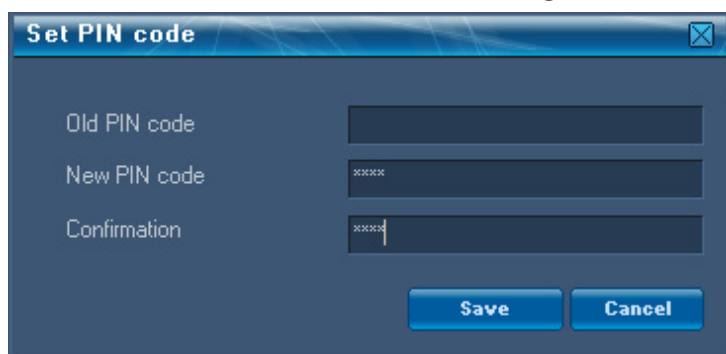

Figure 26 – The PIN code setting and changing window

Just enter the desired PIN code (succession of 1-8 digits) in the **New PIN code** field, confirm the PIN code in the **Confirmation** field and press **Save**.

The PIN-code can be subsequently changed or removed at any time using the **Service → Change PIN code** command. The same window as shown in Figure 26 will be displayed, but in this case you will have to enter a currently used PIN code (**Old PIN code**) and a new one (New PIN code).

Confirm the new PIN code by entering it again (**Confirmation**) and press **Save**. To remove PIN code protection, leave the last two lines empty.
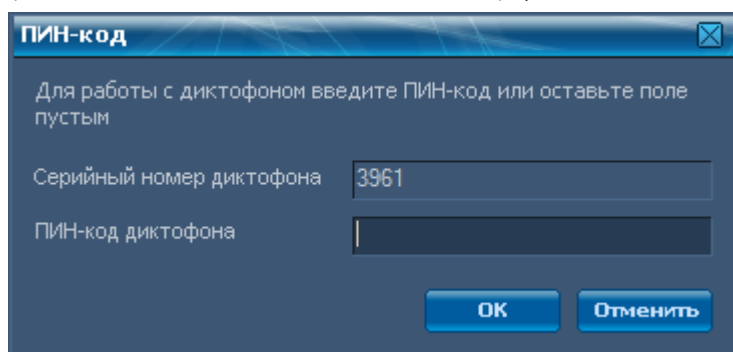

Figure 27 – The PIN code window

After a PIN-code has been set, all subsequent launches of the software will start with a PIN-code prompt (Fig. 27).

If the voice recorder is not connected to your PC, or if you fail to enter the right PIN code, access to **Gnome-P** functions will be denied.

10.5   Working with Sound Recordings

Sound Manager application enables working with recordings stored on recorder memory.

All recordings stored in the voice recorder memory with their attributes are displayed in the Sound Manager Gnome P main window working area (see Fig. 18).

10.5.1   Playing Sound Recordings

Sound recordings from the voice recorder memory can be played in **Sound Manager Gnome P** without previously copying them to the PC hard drive. The program also allows playing any PCM sound files.

To play a recording, double-click on it with the mouse or select **Play** from the **Recording** menu. The slider in the **Playback** group-box will indicate current playback position. Playback can be controlled with buttons ▶ , ⏸ and ⏹ , as well as by dragging the slider. Buttons ⏮ and ⏭ are used to jump to the beginning of the next or previous recording accordingly.

Button ▶⟲ (**Loop**) enables/disables the loop playback mode of a selected recording fragment. Fragment length is defined in the **Loop length** field. Pressing this button will shift current playback position backwards by the specified time interval. Once the slider reaches the position where the **Loop** button was pressed, it will immediately shift back to the loop start position. To switch to the standard playback mode release the **Loop** button.

To play sound files stored on the hard drive, use the button ⏏ or the **Recording → Play from disk** command. Sound files are played the same way as recordings from the voice recorder memory.

Pressing the button 🔧 or using the **Service → Player options** command you may change player parameters, such as: AGC range, noise cancelation mode (microphone or telephone line), noise cancelation threshold (Fig. 28).

Figure 28 – The player options window

To save parameters and to close the **Player options** window press **OK** button. To save parameters and not to close the window press **Apply** button. Pressing the **Default** button you may restore the default player parameters.

Buttons ◁ and ⌃ are used for switching on/off AGC mode and noise cancelation mode accordingly during the record playing.

Volume control can be performed with the **Volume** slider.

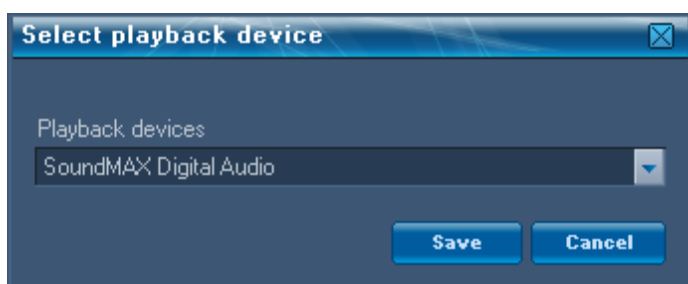To display newly added recordings in the recordings list use the **Recording → Refresh** menu command.

If several playback devices are installed in your PC, select the desired device using the **Service → Select playback device** command. In the displayed window (Fig. 29) select the desired device and press **Save**.

Figure 29 – The playback device selection window

10.5.2   Deleting Sound Recordings

To delete all sound recordings from the voice recorder memory use the **Recording** → **Delete all** command. Keep in mind that deleting large amounts of sound data can take several minutes.

10.5.3   Copying Recordings to PC Hard Drive

Sound Manager Gnome P allows copying sound recordings from the voice recorder memory to the PC hard drive. All or selected recordings will be saved as *wav*-files (PCM 16 bit). Select the desired recording(s) in the list and use the **Recording** → **Save to disk** command. The following window will appear on the screen (see Fig. 31).
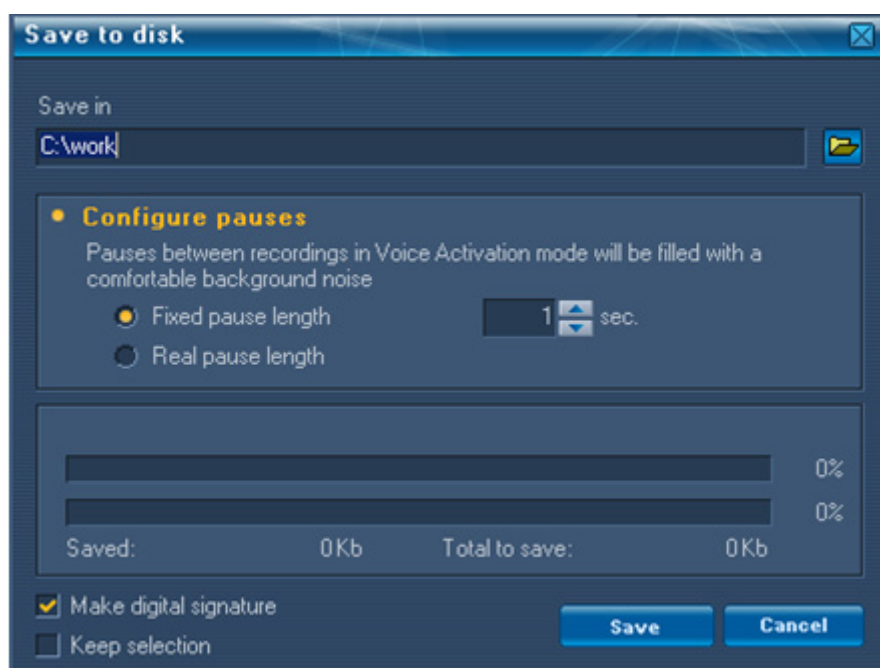

Figure 30 – The Save to disk window

Select a folder to write the recordings to. Each recording will be saved as a separate *wav*-file. If the data were recorded using Voice Activation, such recordings will be stored in one **wav**-file, while the pauses separating one recording from another will be filled with background noise. Pause length can be either set by the user (fixed) or left as in the original recording (real). File creation date will correspond to date of copying a recording to the hard drive.

For the subsequent authentication of the recording you may create a digital signature during copying (see. 10.5.4). To create a digital signature check **Make digital signature** in the **Save to disk** window. The file of digital signature have *.dsg* extension. It will be saved at the same folder as the corresponding sound file. E.g. For the recording named *2000_01_07_01_55_11.wav*, a *2000_01_07 01_55_11.wav.dsg* digital signature file will be created.

Clicking **Save** button will initiate the copying process. The progress bars below will indicate the percentage of completion: upper bar indicates the percentage of saving current file, lower bar indicates the percentage of saving all selected files.

If you need to keep selection of copied files in the records list, tick **Keep selection** in the **Save to disk** window (Fig. 30).

The duration time of data copying process varies depending on the used recording parameters – see Table 3.

Table 3 – Time of 1 hour recorded sound copying

Recordings parameters			Time of 1 hour recorded sound copying, in minutes
Sampling rate	Format	Compression	
8000 Hz	mono	yes	0,5
		no	1
	stereo	yes	1
		no	2
16000 Hz	mono	yes	1
		no	2
	stereo	yes	2
		no	4

10.5.4 Verifying digital signature

The recordings authentication is based on the standard **Digital Signature Algorithm** (DSA). For digital signature, two different keys are generally used, one for creating a signature (private key), and another key for verifying an authentication (public key).

Any digital signature software can be used for verifying a digital signature. To verify the authenticity of the sound recording by means of **Sound Manager** select **Service → Authenticate** command in main window. The window shown at Figure 32 will be displayed.
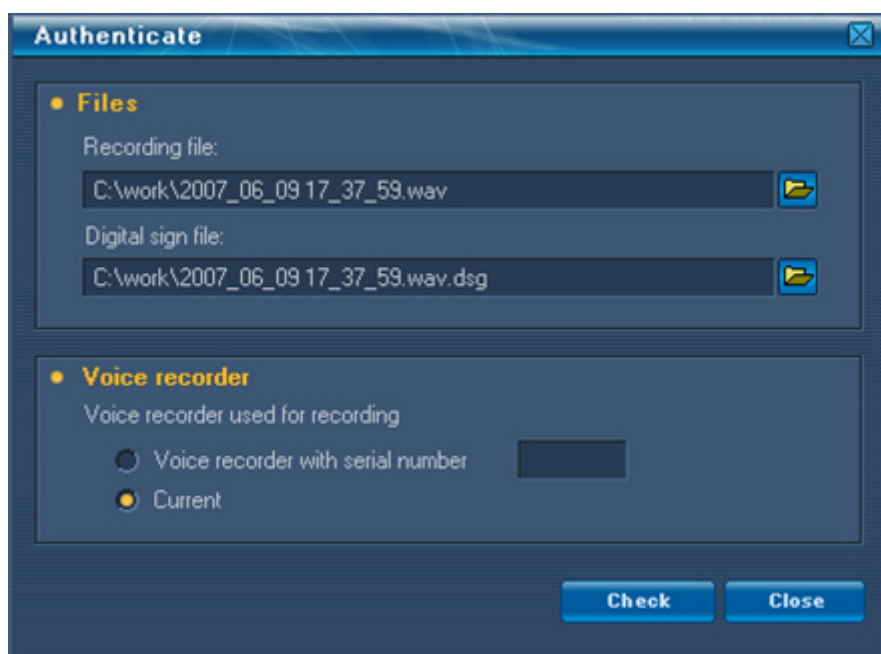

Figure 31 – The recording authentication window

Enter the file names of the recording and digital signature, the serial number of the voice recorder used for recording (or tick **Current**), and press **Check** button.

If the recording is authentic, the following message will appear: **Authentic file**, otherwise you will see: **Changed file** (Fig. 33).
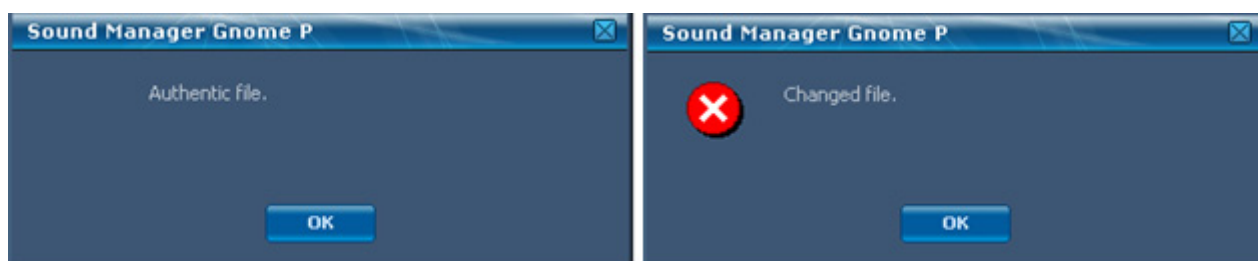

Figure 32 – Recording authentication window

To verify signature by other means you should have a public key. To generate a public key use the **Service** → **Public Keys…** command.

In the displayed window (Fig. 34) enter the serial number of the voice recorder used for recording (or tick **Current**) and press the **Generate** button. In the **Key** group-box the generated public key will appear. For each **Gnome-P** device the public key is unique.
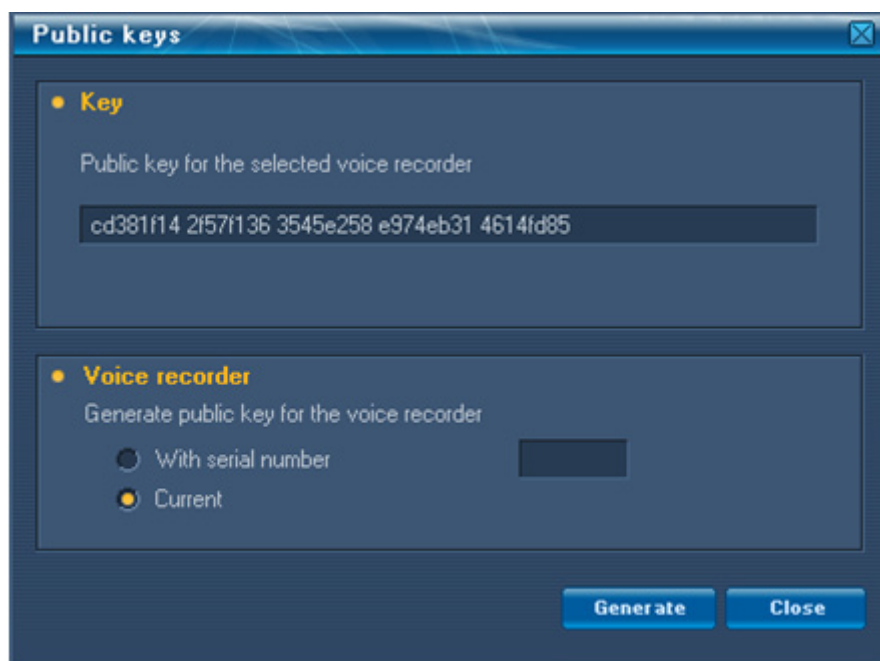

Figure 33 – The public keys generation window

11 UNINSTALLING THE DRIVER

To uninstall the driver, launch the **Device Manager**, right-click on the **GNOME-R Portable recorder** and from the context menu click **Uninstall** (Fig. 35).
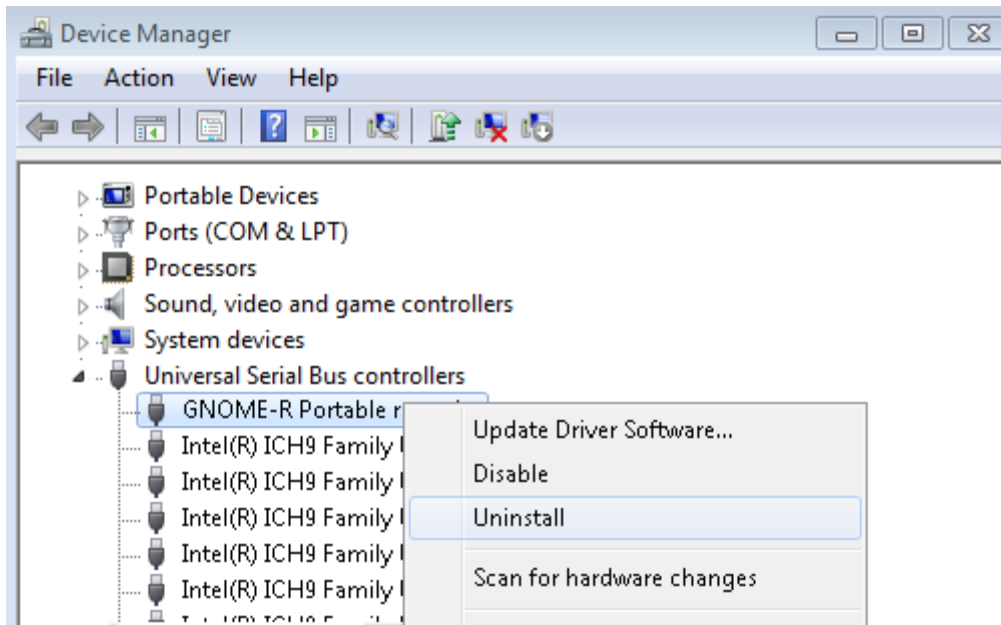

Figure 34 – Context menu of the "GNOME-R Portable recorder" device

In the **Confirm Device Uninstall** dialog box select the **Delete the driver software for this device** check box and click **OK** (Figure 36).

Figure 35 – "Confirm Device Uninstall" dialog box

After successful driver uninstallation you should restart your computer.

12 UNINSTALLING GNOME-P SOUND MANAGER

To uninstall **Gnome-P Sound Manager**, click **Control Panel** from the Start 🌐 menu. In the Control Panel window click **Programs and Features** (Figure 37). In the Programs and Features window, select **Gnome-P** from the list and then click **Uninstall**. The software will be removed from your PC.
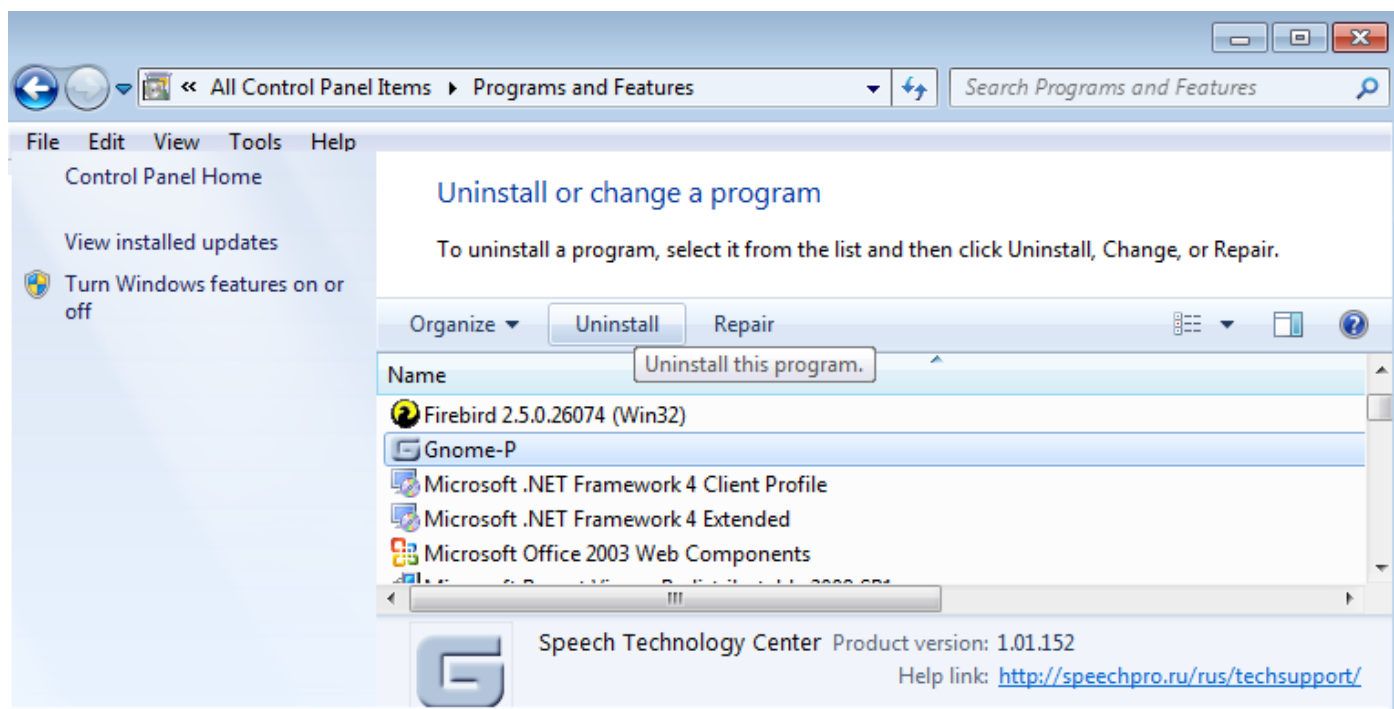

Figure 36 – "Programs and Features" dialog box

13 TROUBLESHOOTING

Error messages may occur during driver's installation or upgrade. They are as follows: "This driver cannot be installed on the computer" or "Installable driver is not compatible with this Windows operating system (OS)".

These errors may occur in the following cases:

– While installing, the driver is selected that does not conform to OS capacity;

– Before installing the driver of 1.0.0.127 version and above, attempts to install earlier versions of the drivers, which are not designed to run on Windows 7, were made.

In case of the errors firstly make sure that during the installation process the driver was correctly selected and driver's capacity corresponds to the PC OS.

If the driver is selected incorrectly, you should restart the driver installation process and then select the driver of the appropriate OS capacity.

If the driver is selected correctly and there are errors while installing the driver, you should uninstall the driver (refer to 4) and then try to install it again.

14 TRANSPORTATION AND STORAGE

Transportation is carried out by all transport vehicles at the temperature between -50 and +60ºC with protection from direct sunlight, atmospheric precipitation and excessive mechanical vibration.

Store the packed equipment at a temperature between +5 and +40ºC and humidity below 80%.

15 DEVICE LIFE SPAN

Device aggregate failure free performance time is at least 10,000 hours.

Recorder service life is at least 5 years (except the battery life).

The recorder must meet technical requirements during the entire service period according to operation conditions and instructions.

16 WARRANTY

The manufacturer guarantees that the issued device conforms to the technical requirements, whereby the user observes the conditions and regulations of operation, storage and transport. The warranty period is 36 months since the date of delivery.

During the warranty period, the manufacturer repairs or replaces the spare parts free of charge, provided that the user has observed the proper use, storage and/or transportation of the device.

The guarantee does not apply to the batteries.

In case any defects during the warranty period, the warrant claims are accepted to the following address:

Russia, St. Petersburg, 196084, PO box 124

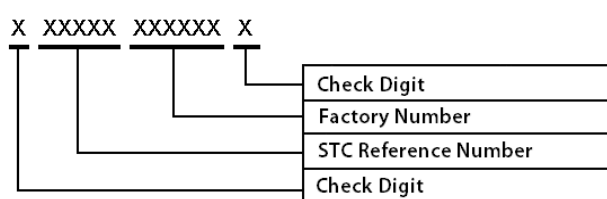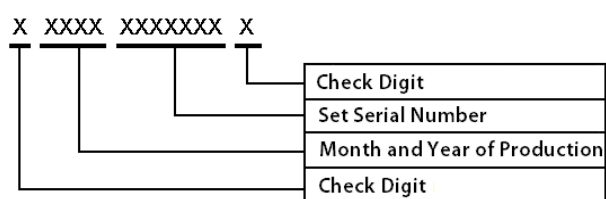Tel.: (812) 325-88-48 Fax: (812) 327-92-97

E-mail: support@speechpro.com

17   ACCEPTANCE CERTIFICATE

Gnome-P STC-H368 Pocket Digital Stereo Voice Recorder

serial number _____,
conforms to technical requirements and is declared suitable for use.

PAdjustment conducted by

STAMP   _____   _____   _____
                              Subscription   *full name*   *day, month, year*

Date of issue

                    _____   _____   _____
                         day, month, year   *Subscription*   *full name*

Components of the set and device serial numbers

X XXXX XXXXXXX X

| Check Digit |
| Set Serial Number |
| Month and Year of Production |
| Check Digit |

X XXXXX XXXXXX X

| Check Digit |
| Factory Number |
| STC Reference Number |
| Check Digit |

007-241215