Gnome-P II

Portable Digital Stereo Recorder
STC-H661

Operation Manual

Speech
Technology
Center

Note to Customer

Before getting started, please read this Operation Manual carefully. The Operation Manual will allow you to use this device properly and safely.

In case you have any questions regarding device operation and use, please feel free to contact STC Support or local resellers.

To contact Technical Support, use the following email: support@speechpro.com

Saint Petersburg

Phone: +7 (812) 325-88-48

Fax   +7 (812) 327-92-97

Moscow

Phone: +7 (495) 669-74-40

Fax   +7 (495) 669-74-44

You can also open a support ticket with us via our web portal: http://www.speechpro.com/support_form/

The manufacturer retains the right to issue amendments to this Operation Manual following any improvements to device design without any prior notification.

Any such amendments will be published in a new Operation Manual edition, as well as on STC website: http://www.speechpro.com.

Recent version on the Operation Manual is supplied on CD.

CONTENTS

INTRODUCTION

Typographic Conventions

The following typographic conventions are applicable to this Manual:

Formatting	Description
Normal	Guide body text.
Bold	Used for marking out **software component names**, as well as interface element names (**headers**, **buttons**, etc.).
Bold Italic	Indicates file names and access paths.

Below there is a notification layout used in the Manual according to notification severity level.

Links to other documents in the body text.

Notes, important notices, and instructions obligatory for fulfilling.

Not fulfilling these requirements may potentially lead to hardware and software malfunctions and failures.

Trademarks

Windows® is a trademark of Microsoft® Corporation.

Other company and product names mentioned in this document are the property of their respective owners.

1 BASIC DETAILS

1.1 Title, Manufacturer

Title: Gnome-P II Portable Digital Stereo Recorder STC-H661

Manufacturer: Speech Technology Center Limited.

Address: 4A Ul. Krasutskogo,196084, Saint Petersburg

Phone: (812) 325-88-48

Fax: (812) 327-92-97

1.2 Service Maintenance and Technical Support

To contact Technical Support, use the following methods:

Email: support@speechpro.com

Web Portal: http://www.speechpro.com/support_form

When contacting our Technical Support, please include the following details into your call/ticket:
Device title and version;
Device content;
Detailed issue description.

2 DEVICE PURPOSE

2.1 Purpose and Scope of Use

Gnome-P II Portable Digital Recorder is a professional sound recording unit providing high-quality mono and stereo speech signal recording under difficult acoustic conditions.

Its extra small dimensions and weight, as well as user-friendly control, make it usable for a wide range of customers and enable recording speech signals both indoors and outdoors.

Recording process is performed via either two onboard or two external microphones as well as from hardware line outputs.

Channel distribution between source signals is performed manually. The recorded sound is stored in the device internal flash memory.

Recording process may be controlled both manually and automatically.

Connecting the device to a PC enables recorded data playback, copying recordings to PC hard drive and changing recorder options.

2.2 Legal Warning

Recordings made with the device are acceptable for speaker identification or other forensic analysis purposes.

Before using the device, you are encouraged to make yourself familiar with any laws and regulations regarding voice recording applicable to your country.

3   DATA PROTECTION

To protect recorded data from unauthorized use and disclosure, key recorder features (deleting recorded data, modifying recording options, saving and playing recordings on a PC) can only be performed by means of specially designed software.

Access to recordings is carried out via supplied software and protected with PIN.

The default settings do not involve PIN. Detailed information on PIN settings is described in section 9.4.14.

After copying data to a PC hard drive, recorded data authentication is enabled via digital signature (see section 9.3.3).

4 SCOPE OF SUPPLY

4.1 Standard Package

Title	Quantity
Gnome-P II Portable Digital Stereo Recorder STC-H661	1
AC power supply	1
USB cable	1
Line-in cable	1
Microphone set with a remote control	1
Compact headphones	1
Specialized Manager software for Gnome-P II recorder STC-H661	1
Operation Manual	1
Shipping box	1

5   SPECIFICATIONS

Spec			Value/Description
Number of channels			2
Number of built-in microphones			2
Number of microphone inputs			2
Number of line inputs			2
Internal hard drive space			16 GB
Recording standard			mono/stereo 16, 24 bit PCM
Data compression			µ or A law
Sampling rate			8000, 11025, 16000, 22050, 32000, 44100 Hz
Nonlinear distortion coefficient (at 1 kHz, with 16 kHz sampling rate, with no compression 24 bit PCM)		line input	0.01 ± 0.009 %
		microphone input	0.01 ± 0.009 %
Signal-to-noise ratio (at 1 kHz, with 16 kHz sampling rate, with no compression 24 bit PCM)		line input	93 ± 3 dB
		microphone input	83 ± 5 dB
Dynamic range of recorded signals (at 1 kHz, with 16 kHz sampling rate, with no compression 24 bit PCM)		line input	93 ± 3 dB
		microphone input	83 ± 5 dB
Frequency response unevenness			1 ± 0.8 dB
Depth of AGC			35 ± 5 dB
Internal microphone type			Electret
Operation duration without charging	Recording duration with settings 8 kHz, mono, 16 bit PCM		70 h
	mode	standby	20000 h
		volume-triggered recording	160 h
Maximum recording duration (Stereo mode, 16 bit PCM, 32 kHz sampling rate)			32 h
Maximum recording duration (Stereo mode, 24 bit PCM, no compression, 16 kHz sampling rate)			45 h
PC connection standard			USB 2.0
USB operation mode			High-speed
Dimensions			75.2x48.9x12.8 mm, ± 1.0 mm
Case			Metal
Weight (battery included)			70 ± 5 g
Supported Microsoft® Windows versions			XP, 7, 8, 10

6   RECORDER DESIGN

6.1 Control Units, Indicators and Switches

The recorder comes in a black metal case. Line-in and line-out jacks are protected with rubber plugs attached to the device case.

Device exterior with indication of parts is shown on Figure 1. Device part description is listed Table 1.
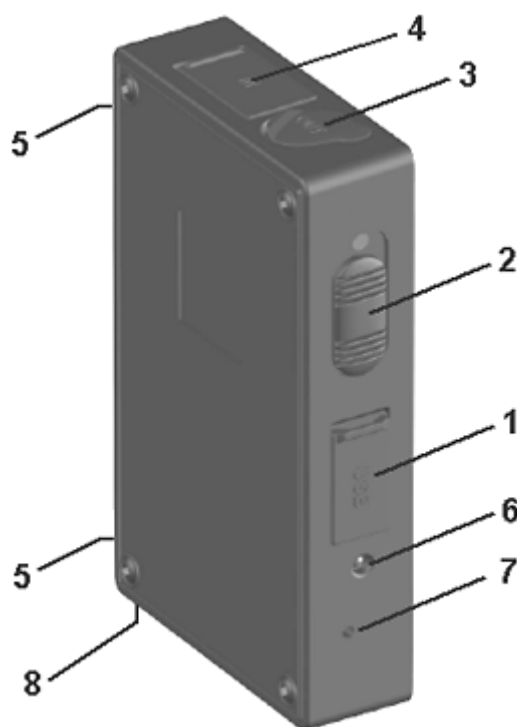

Figure 1: Product exterior

Table 1: Device part description

No	Marking	Title
1	**USB**	USB port
2	● ☐	Recording switch
3	**OUT**	3.5 headphone jack
4	**IN**	Mic jack
5		Internal mics
6		Battery charge level and recording mode LED indicator
7		Functional button (Erase/playback button)
8		RESET button

6.2 Device Memory

For recording storage, the eMMC embedded non-volatile memory system of 16 GB total capacity is used in the device.

The storage keeps audio data for at least 10 years when the device is shut down.

You can delete all recordings from the device manually or use supplied software for selecting and erasing recordings (see section 7.4.2).

6.3 Microphone Set
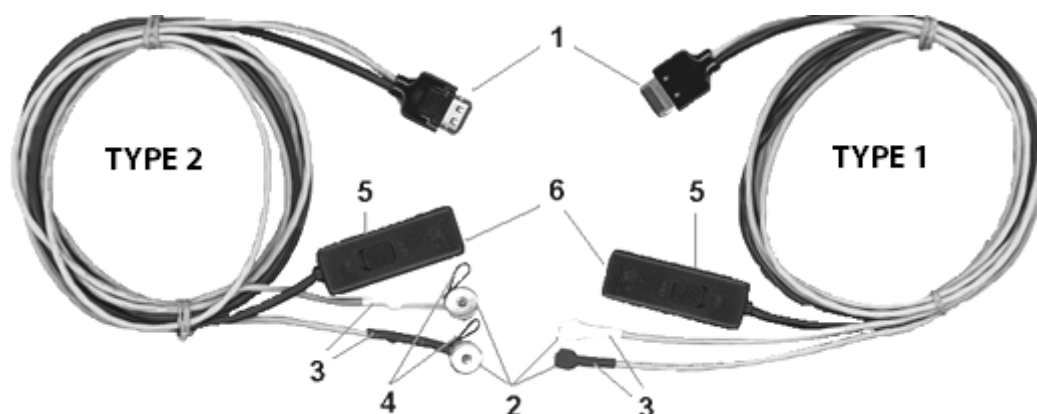
There are two microphone set options (Figure 2).

Figure 2: Microphone set

Both microphone sets include two mics **2** and remote control **5**. Mic cables of left and right channels **3** are marked with different colors: left channel mic is marked with darker color.

To prevent accidental disconnection from the device (**4** on Figure 1) microphone plug is fitted up with plunger pin. Each **Type 2** microphone is also supplied with a wire loop **4** for fastening it to clothes.

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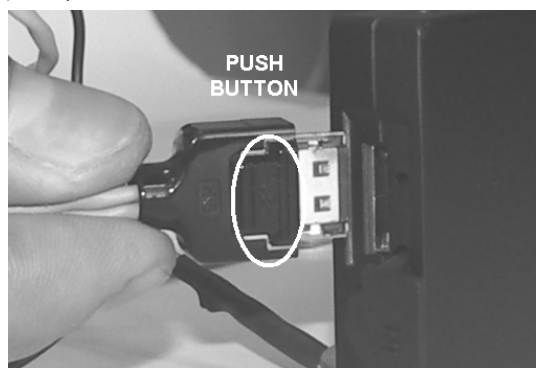

Figure 3: Connecting external microphone

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 device serial number (Figure 3).

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

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

6.4 USB Connecting Cable

The recorder is connected to PC with a standard USB-to-MiniUSB cable (Figure 4).

Figure 4: USB connecting cable

6.5 Power Supply

6.5.1 GNOME-P II Battery

While rerecording power consumption reaches 25 mA. In the volume-triggered mode (with input amplifiers and volume-triggered amplifier enabled) it equals 6 mA maximum.

Minimum power consumption amounts up to 50 µA in the timer mode.

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

6.5.2   Battery Charge

The recorder battery is charged by means of 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 5 hours.

Please note that when charging the recorder through PC USB port, you need to consider that 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 connection issues.

The red LED (**6** on Figure 1) will light up and remain on continuously until the battery is fully charged.

After the battery is fully charged, the process will be automatically finished 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 charging 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 for at least 5 hours.

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

7   OPERATING THE DEVICE

7.1   Default Configuration

Voice recorder comes complete with an integrated fully charged battery, so that you can get started immediately using manual (active) mode or connecting it to PC. The device can record, playback and delete files. The recorder default settings are as follows:

Mono recording;

16 kHz sampling rate;

No compression;

0 dB input gain level (manual);

Signal input via left channel internal microphone;

PIN code not enabled, date/time not set.

7.2   Getting Started

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

Connect Gnome-P II to PC using USB connection cable (see section 6.4);

Install the driver from the installation CD (see section 8.2);

Set current date/time and recording options according to recording conditions (see section 9.4.15);

Enable and enter a PIN to protect Gnome-P II settings against unauthorized access, if required (see section 9.4.14);

Plug in external microphone, if required (see section 6.3).

> ⚠ Before connecting your 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 II voice recorders to a PC at a time. Otherwise it may result in the **Voice Recorder Manager** application malfunction.

7.3   Audio Recording

7.3.1   Recording Hints

The voice can be recorded in PCM* 16 or 24 bit format without compression or with A-law or μ-law compression.

To obtain high-quality audio recording, we recommend you to follow the guidelines below.

> 🗂 You are not recommended to start the recording while the device is connected to PC USB port. Otherwise, the recorder disconnects from PC and the recording process will be enabled. Because of PC interference of 5 V, you may experience poor audio recording quality.

> ⚠ After the device memory is 50%-100% full you are recommended to format the device memory instead of deleting recording in order to extend flash memory life (see section 9.3.5).

---

* Pulse-code modulation (PCM) is a digital representation of an analog signal that takes samples of the amplitude of the analog signal at regular intervals.

The best mic recording performance can be achieved with PCM 24 bit and 22050 Hz sampling rate. Stereo recording provides speech intelligibility even in noisy conditions.

Mono recording mode involves audio recording through only one internal or external mic (left channel).

To prevent useful signal loss, use volume-triggered recording mode only if input signal level is stable.

Place microphones as close to the useful signal (speech) source as possible (but not closer than 0.5 m) 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.

During stereo recording external microphones must be placed at least 15 cm away from each other. Try to place the microphones in such a way as to avoid vibration, impact and rubbing against other surfaces.

External microphones are more sensitive and at the same time can be easily concealed (under a jacket lapel, shirt collar, on the cuff). At the same time they are more sensitive to external electromagnetic interferences.

Avoid permanent contact of the device or external microphones with rough surfaces (such as table, car body, walls etc.).

7.3.2   Manual Recording

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

To start recording manually, move the ● switch (**2** on Figure 1) into the **REC** position (or the remote control switch into the **ON** position). To stop recording, move back either the **ON/OFF** switch into the ◻ **STOP** position or remote control switch into the **OFF** position).

The remote control replicates the positions of the ON/OFF switch. See the description in the table below:

The remote control position	Position of the switch (2 on Figure 1)	Recording mode
ON	**REC**	Recording is on
ON	**STOP**	Recording is on
OFF	**REC**	Recording is on
OFF	**STOP**	Recording is stopped

7.3.3   Volume-Triggered Recording (VOX)

To enable volume-triggered recording mode (VOX) do the following:

Enable this mode while configuring recording parameters and set recording volume thresholds (see section 0);

Move the recording switch located on the device case (**2** on Figure 1) into the ● **REC** position or the remote control switch into the **ON** position.

Recording session will begin after the input signal level exceeds the specified start/stop threshold, and stop after a defined period after the signal level falls below the threshold. Every time the recording starts or finishes in the volume-triggered mode, the LED indicator blinks once (**6** on Figure 1).

To stop a voice-triggered recording, move the switch into the ◻ **STOP** position or remote control switch into the **OFF** position.

Volume-triggered recording mode can be used in combination with the scheduled recording mode (see section 7.3.4).

7.3.4   Scheduled Recording Mode

Use scheduled recording mode when the exact start and stop time of a recording session is known beforehand.

This mode allows you to start a recording session automatically at any desired time using built-in timers. To enable the scheduled recording mode, while configuring the device parameters (see section 9.4.10), do the following:

Enable one or several timers;

Set the desired start and stop time for each recording session.

> If multiple times are enabled and the end of one recording session overlaps the beginning of the next recording one, the device will record both sessions into one audio file.

In this case, manual recording controls usually have higher priority than the timer settings. If the button is not disabled, you can stop a scheduled recording by moving the switch (**2** on Figure 1) first into the **REC**, and then into the **STOP** position.

If the switch is disabled, the scheduled recording cannot be stopped manually. Thus, the scheduled recording will be stopped according to the timer, after the memory gets full or if the battery gets fully discharged. This option is especially helpful while recording crucial information or important data as it ensures the STOP switch will not be accidentally moved.

Scheduled recording mode can be used in combination with the volume-triggered recording mode (see section 7.3.3).

> If both scheduled and volume-triggered recording modes are on, recording session will only start once the signal level exceeds the threshold.

7.3.5   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. Loop recording duration can be specified in hours and minutes (see section 9.4.7).

Maximum loop duration cannot exceed 2 GB.

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

7.3.6   Recording Duration

Recording duration depends on the specified parameters and available memory. Table 3 lists approximate recording time for different recording modes and sampling rate values.

Table 3: Recording duration for various modes and sampling rate values.

Mode	Recording duration with the sampling rate	
	22050 Hz	8000 Hz
μ-law 8 bit, mono	196 h	541h
μ-law 8 bit, stereo	98 h	270 h
PCM 24 bit, mono	64 h	180 h
PCM 24 bit, stereo	32 h	90 h

> Note that any recording exceeding 2 GB will be divided into 2 files automatically. Maximum recording size is 2 GB.

7.4   Recording Playback and Deletion

You can delete and play back recordings stored in the device memory either using device controls or by means of the supplied application.

Playback and deleting process by means of **Voice Recorder Manager** is described in section 9.5.

To play back or delete recordings with multi-functional button located on the device case (**7** on Figure 1), you must assign the relevant function via the application (see section 9.4.11).

Without application you can play back only the last recorded audio file.

By default the button (**7** on Figure 1) performs playback.

7.4.1 Playback

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

7.4.2 File Deletion

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

> Deleted data cannot be recovered.
> In case PIN is enabled, the erase option of the button becomes unavailable.

7.5   RESET Button

The **RESET** button located on the device case (**8** on Figure 1), is used for recorder reboot. The **RESET** button is located in the small pin sized hole. You will need a paper clip to actually press the button. After pressing **RESET**, all user settings will not be modified.

> Do not use needles and other sharp objects as they can damage the button, and its functions will no longer be available.

8 VOICE RECORDER MANAGER

8.1 GNOME-P II Software and Its Functions

Connecting the device to PC you can use it as a FAT32 external memory unit. Nevertheless, to access all functions, you will need the software that comes with the recorder: device driver and the **Voice Recorder Manager** application.

Device configuration is performed via **Manager**.

Voice Recorder Manager 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, deletion and export to PC HDD).

8.2 Software Installation

8.2.1 System Requirements

The minimum system requirements for the Manager are:

PC with available USB port and a CD drive;

CPU: Intel Pentium III;

RAM: 256 MB; or more;

Audio I/O sound card;

Headphones;

Mouse, keyboard;

At least 16 GB of free hard disk space to store recorded data is recommended.

8.2.2 Driver Installation

To operate audio files via **Voice Recorder Manager**, you must install the driver from supplied CD first.

> Only the user with administrator rights can install the driver.

> The driver installation must be performed with no PIN enabled on the recorder. Before installing the drivers, make sure the recorder is not protected with a PIN.

Connect Gnome-P II recorder to PC using the USB cable and insert the installation CD into the drive. OS will detect the device and mark it as unknown.

The following instruction describes installation process for **Windows 7**.
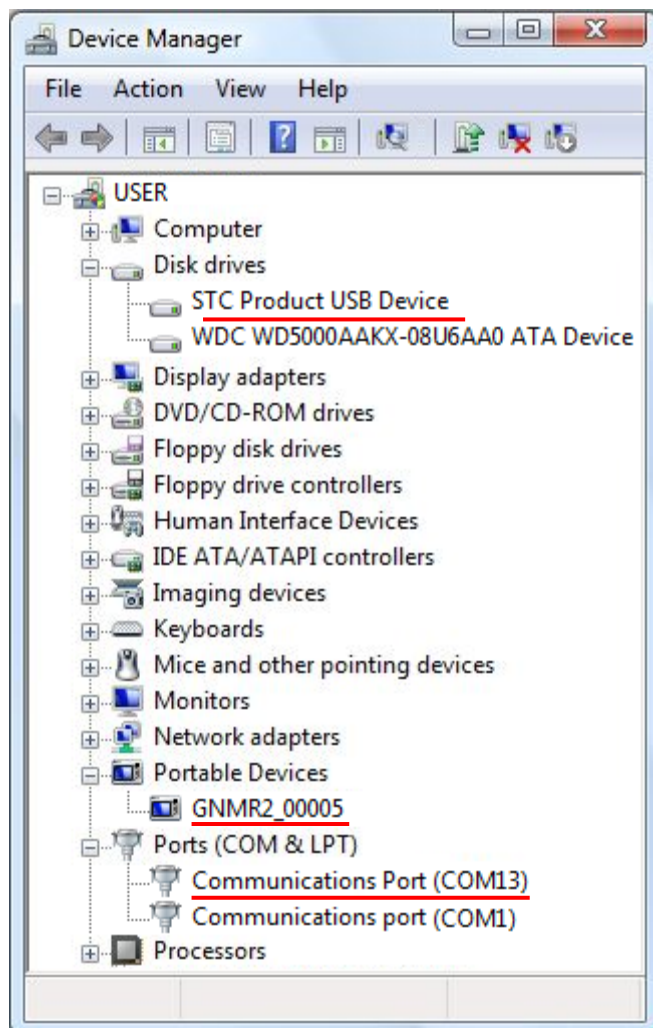
Figure 5: Installing Gnome-P II

Select and install the driver that conforms to your PC OS from the installation disk.

After the driver installation you must restart your OS to apply the changes.

Open **Device Manager.** To do so, click **Start** 🔵 and select **Control Panel > Device Manager**.

If the driver is installed successfully, the device will be displayed in the **Device Manager dialog** (Figure 5):

a) In the **Disk drivers** section as **STC Product USB Device**;

b) In the **Portable Devices** as **GNMR2_XXXXX**, where XXXXX is the device serial number;

c) In the **Ports (COM & LTP)** section as **Communications Port.**

No additional **Voice Recorder Manager** installation is required. To run the application, click on the **Manager.exe** file.

9 VOICE RECORDER MANAGER

9.1 Getting Started

To run **Voice Recorder Manager**, click on the **Manager.exe** file located on the supplied CD or device flash memory.

9.2 Application Main Screen

Voice Recorder Manager main screen (Figure 6) is composed of application title, 3 customer areas arranged the following way:

1: **Main menu**

2: **Device state**

3: Area displaying one of the three operation modes: **Overview**, **Settings** and **Recordings**
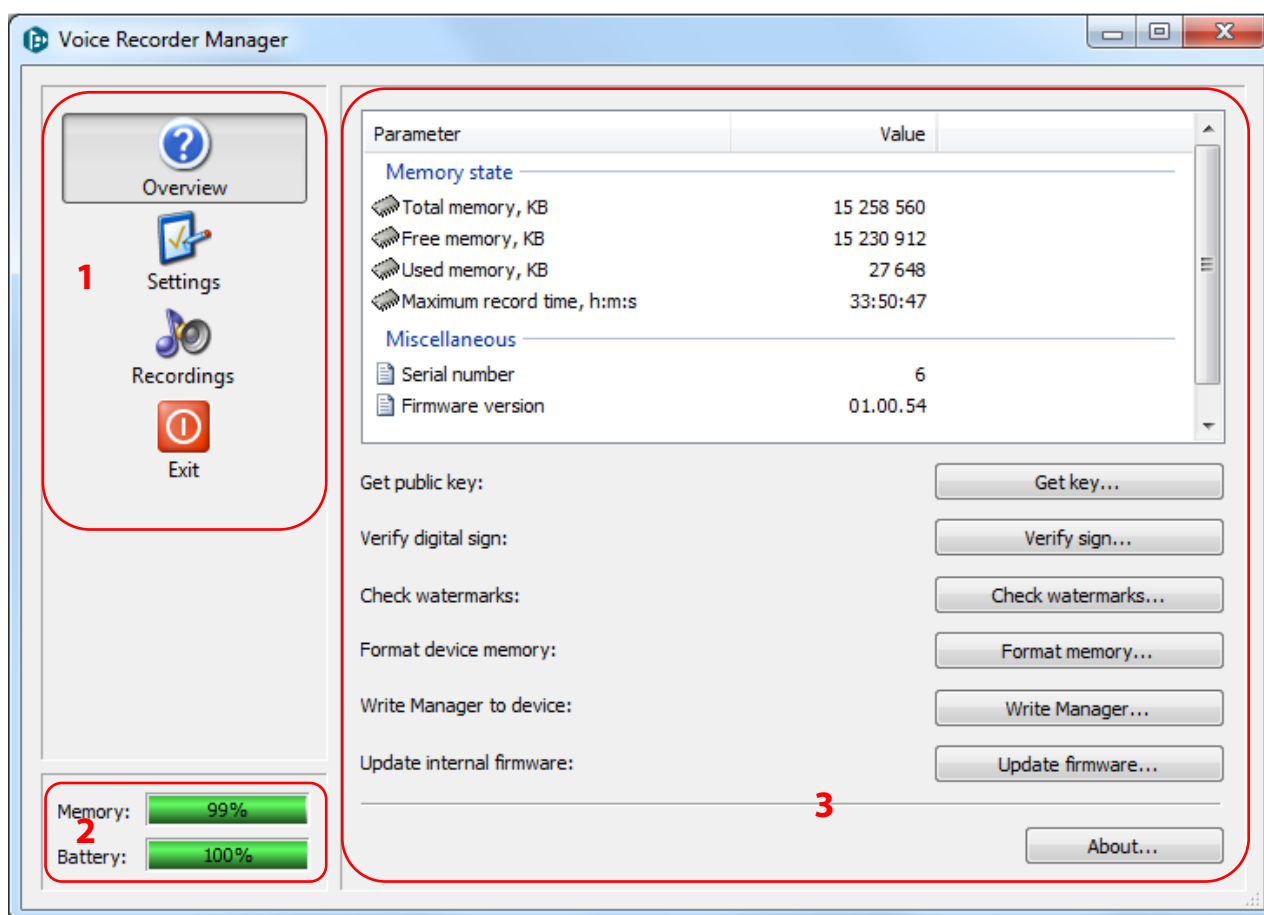
Figure 6: Main screen. Overview area

Application main screen is composed of the following icons:

Icon	Description	Icon	Description
	Opens the **Overview** area (see section 9.3).		Opens the **Recordings** area (see section 9.5).
	Opens the **Settings** area (see section 9.4).		Closes the application (see section 9.6).

In the **Device state** area there are two indicators: **Memory** and **Battery**.

Indicator	Description
Memory 99%	Displays device free memory.
Battery 100%	Displays battery charge level.

9.3 Overview

To open the **Overview area**, click on the ⓘ icon located in the application main menu (Figure 6).

9.3.1 Main Screen: Overview Area

The **Overview** area (**3 on Figure** 6) displays device info and several controls.
The **Overview** area contains the following device information (Figure 7).

Parameter	Value
Memory state	
Total memory, KB	15 258 560
Free memory, KB	15 229 952
Used memory, KB	28 608
Maximum record time, h:m:s	67:41:19
Miscellaneous	
Serial number	6
Firmware version	01.00.54

Figure 7: Overview area. Device information

The **Memory state** section lists the following parameters:

Total memory, KB: total device memory in kilobytes;

Free memory, KB: the amount of free memory;

Used memory, KB: the amount of used memory;
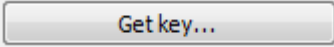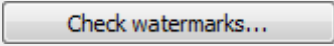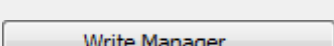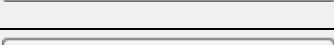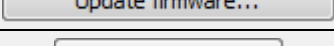
Maximum record time, h:m:s: estimated recording duration with specified device operation parameters.

The **Miscellaneous** section contains the following data:

Serial number: device serial number;

Firmware version: Device firmware version.

The **Overview** area also contains the following buttons:

Name	Description
Get key...	Creates public key file (see section 9.3.2).
Verify sign...	Verifies file authenticity (see section 9.3.3).
Check watermarks...	Verifies audio file integrity (see section 9.3.4).
Format memory...	Formats device memory (see section 9.3.5).
Write Manager...	Is used to write Voice Recorder Manager to device memory (see section 9.3.6).
Update firmware...	Updates device firmware (see section 9.3.7).
About...	Opens the dialog with information about the application (see section 9.3.8).

9.3.2 Getting Public Key

The **Get key** button is used for creating public key and saving it to PC hard drive. Public key is needed for audio recording authenticity verification using digital signature (see section 9.3.3).
Click **Get key** (Figure 6). In the **Save as** dialog specify folder you want to save file to.
The default public key name is **_PublicKey_**. You can change file name.

9.3.3 Digital Signature Verification

The **Verify sign** button allows you to verify recording authenticity thus, to make sure audio file has not been modified after being copied to PC hard drive.
If digital signature has been created for a recording (see section 9.5.7), you can verify its authenticity by analyzing this recording and digital signature file. To perform verification, apart from audio recording you need digital signature file and public key file.

Figure 8: Files prepared for verification process

You are recommended to locate public key file (**.key**), digital signature file (**.dsg**) and audio recording (**.wav**) in the same folder (Figure 8).
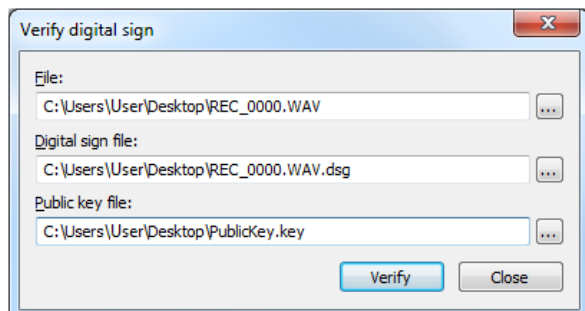

Figure 9: Specifying access paths

To start verification process, click **Verify sign** (Figure 6).

In the **Verify digital sign** dialog (Figure 9) specify access path to the file, its digital signature and public key files and click **Verify**.

Verification results are displayed in the dialog shown on Figure 10.
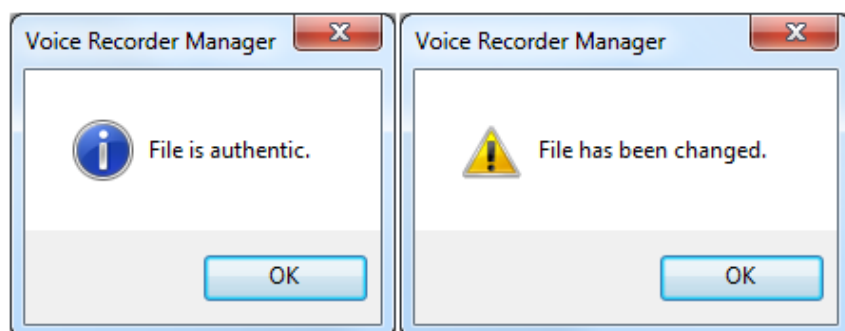
Figure 10: Verification result dialog

If a file has been modified, you will see the following message: **File has been changed**.

If a file has not been modified, the following message will appear: **File is authentic**.

> **Get key** and **Verify sign** are always accessible, which allows you to perform verification without connecting the device to PC .

9.3.4 Watermark Check
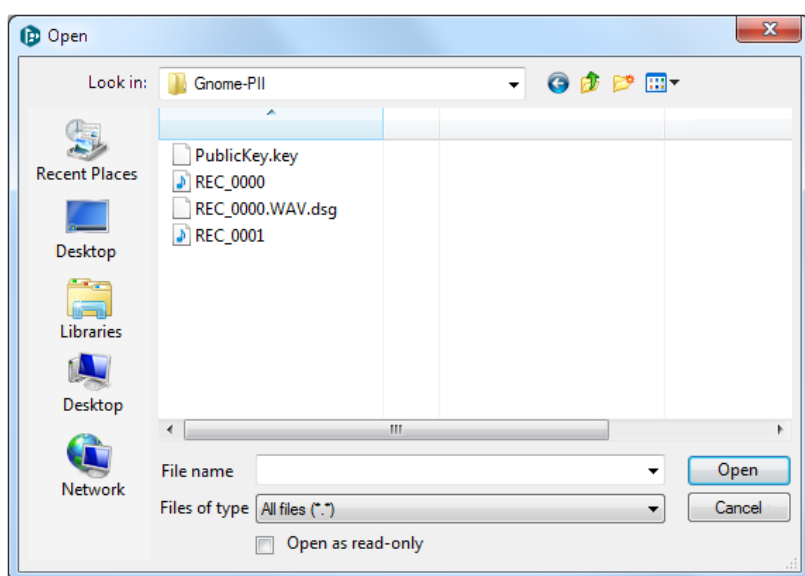
Figure 11: Selecting files for integrity check

To perform file integrity check, click **Check watermarks** in the application main screen (Figure 6).

In the **Open** dialog (Figure 11) select a **.wav** or **.rng** file.

Click **Open** to start the process. Click **Cancel** to close dialog.

The results are displayed in the **Check file** (Figure 12) dialog. The number of lines in the table equals number of fragment the application has detected.
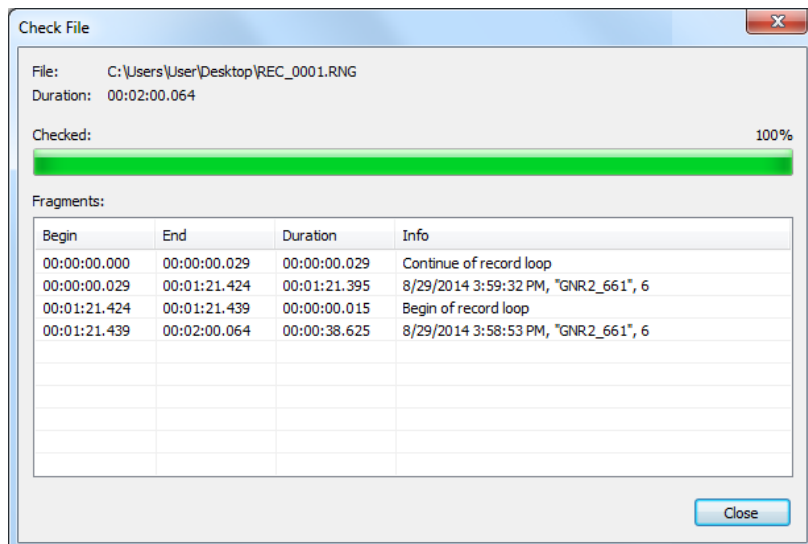
Figure 12: Watermark check results

The table displays the following parameters for each fragment:

Begin: fragment start time;

End: fragment end time;

Duration: total fragment duration;

Info: watermark check results.

The **Info** column contains data on the detected fragment or whole file. Table in the dialog contains the following information: Date and time fragment or file has been created;

Device name, for example, GNR 2_661;

Device serial number, for example, 1904.

If no watermarks are detected in *.wav* or *.rng* file, the **Info** column will display the following message: **Watermarks not found**.

If watermarks are found in a *.wav*, the **Info** column will display watermark text for the whole audio file.

If a *.wav* file with watermarks has been modified, the **Info** column will display one or more messages: **Watermarks not found**.

Checking *.rng* file containing watermarks recorded in the loop mode, the **Info** column will contain messages marking the beginning of each recoding loop: **Begin of record loop** and **Continue of record loop**.

If an **.rng** file containing watermarks has been modified, apart from recording loop beginning and continuation the **Info** column will display one or more **Watermarks not found** messages.

.wav file integrity check can detect not only intentional file modifications but interferences caused by recorder malfunctions during the recording process or storage as well. The duration of a corrupted audio file fragment is measured in milliseconds while intentionally modified recording part can last several seconds or minutes.

Click **Close** to exit the **Check file** dialog.
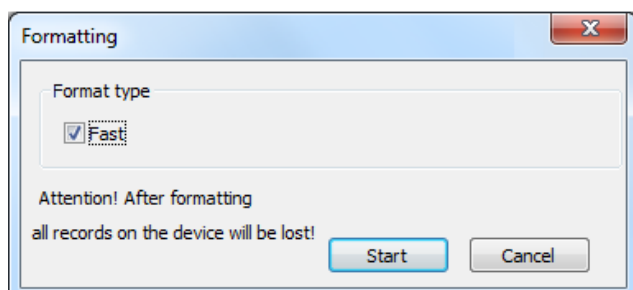
9.3.5 Memory Formatting

Figure 13: Fast formatting

To perform device formatting, click **Format memory** (Figure 6).

> ❗ After the device memory is 50%-100% full you are recommended to format the device memory instead of deleting recordings in order to extend flash memory life. Please note that formatting will delete all data on the device.

Select formatting type: fast or complete formatting. To select quick formatting, tick the **Fast** checkbox (Figure 13). To begin formatting process, click **Start**. To cancel formatting, click **Cancel**.
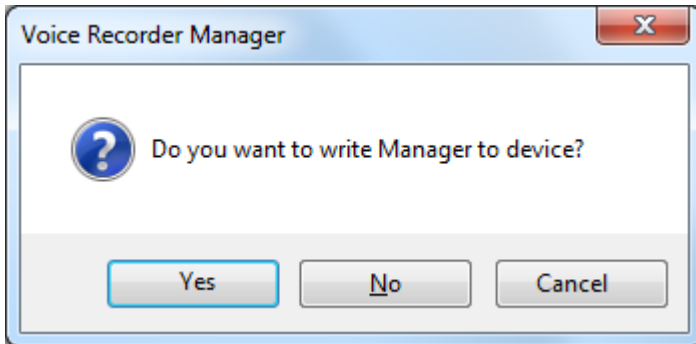
9.3.6 Writing Manager to Device

Figure 14: Copying Manager to device memory

In order to copy current **Voice Recorder Manager** version to device memory, click **Write Manager** (Figure 6).

To confirm, click **Yes** in the dialog (Figure 14).To close the dialog, click **No** or **Cancel**.

9.3.7 Firmware Update
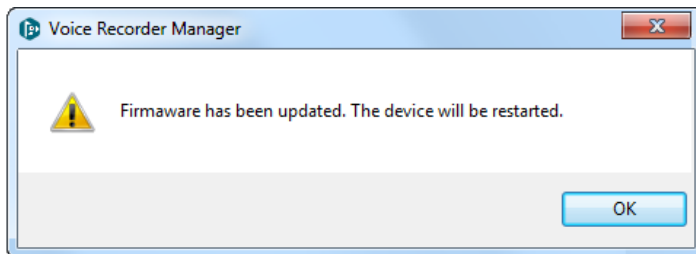
Figure 15: Update confirmation

To update device firmware, click **Update firmware** (Figure 6).

In the Explorer dialog select *.bin* firmware file and click **Open**.

New firmware version will be applied to the device. A message suggesting rebooting PC (Figure 15) will show up. Click **OK**.
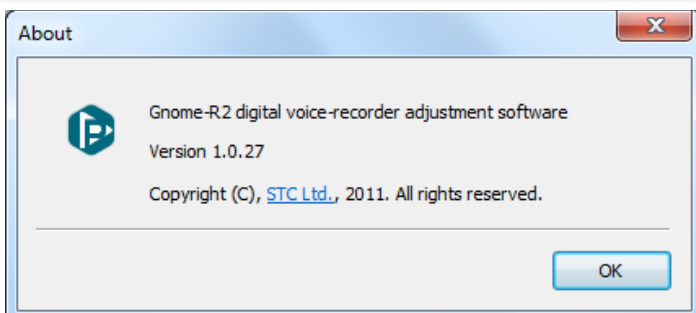
9.3.8 About

Figure16: The About dialog

To view the **Voice Recorder Manager** information, click **About** (Figure 6).

To close the **About** dialog (Figure 16), click **OK**.

9.4 Settings

The **Settings** area is used for configuring device parameters.

To open the **Settings** area, click [icon].
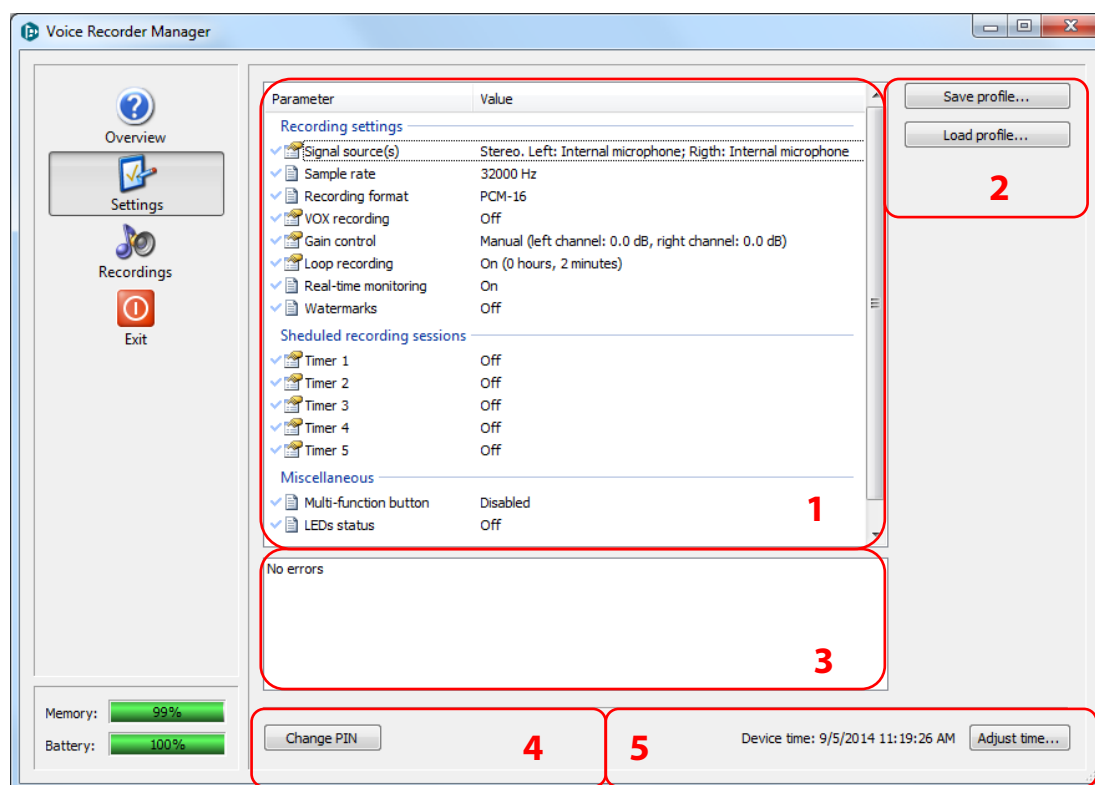
9.4.1 Settings Area

Figure 17: Settings area

Apart from main menu and device state, the **Settings** area contains the following controls (Figure 17):

1 Recording settings area;

2 Profile loading and saving buttons;

3 Error message area;

4 Setting and changing PIN;

5 Device time Adjusting button.

Configuration is performed via shortcut menu or dialog for each parameter.

To open a shortcut menu, right-click a parameter title.

To open a parameter dialog, double-click its title.

Below you can see a complete list of adjustable parameters.

The **Settings** area of the application main screen contains section for displaying error messages. This section displays errors that may occur during device configuration.

If no errors have been detected, this section will display **No errors** message.
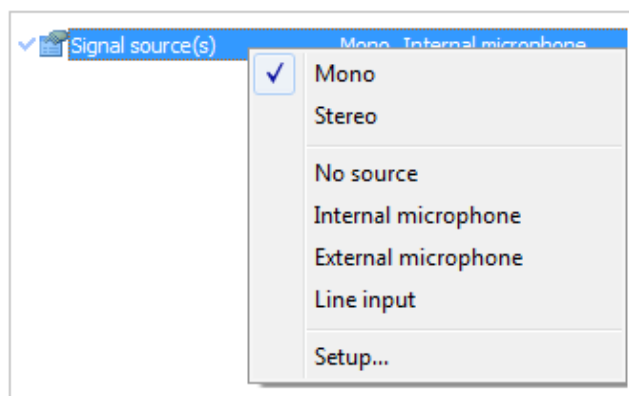
9.4.2 Signal Source

Figure 18: Signal source shortcut menu

Source signal shortcut menu (Figure 18) is used for selecting recording source for left and right channels.

A signal can be recorded in either mono or stereo.

Stereo recording involves recording onto two separate channels, one channel for the left sound input and another channel for the right sound input. Mono recording involves recording onto left sound input only.

The range of audio sources includes the following:

- Built-in microphone;
- External microphone;
- Line input.

To set recording signal source, click **Setup** in the shortcut menu (Figure 18).
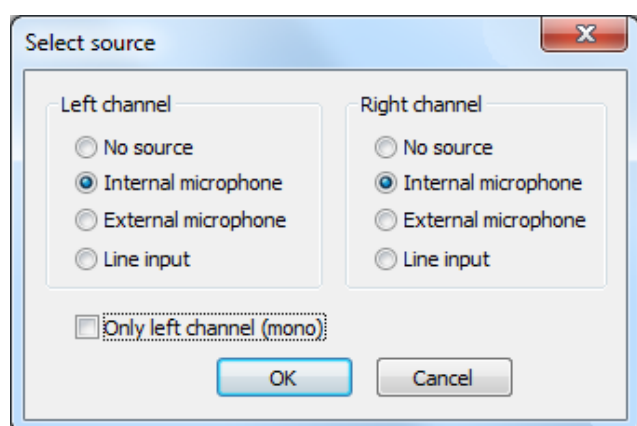
Figure 19: Selecting signal source

Use **Left channel** (Figure 19) and **Right channel** areas to set signal sources for recording.

For mono recording, tick the **Only left channel (mono)** checkbox.

> If the signal source for both channels is not specified, the application will display an error message in the area **3** (Figure 17).

To apply the settings to the recorder, click **OK**.

To close the **Signal Source** dialog and cancel the current selections, click **Cancel**.

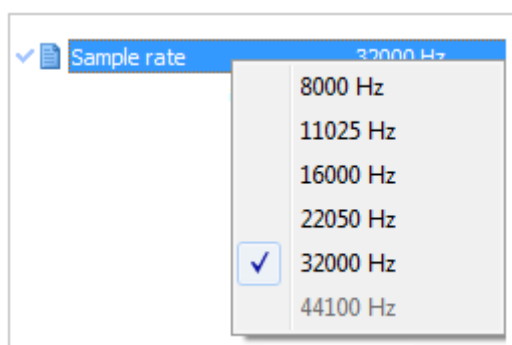## 9.4.3 Sampling Rate Area

Figure 20: Sampling rate area

Use **Sample rate** shortcut menu (Figure 20) to select recording sampling rate: 8000, 11025, 16000, 22050, 32000 or 44100 Hz.
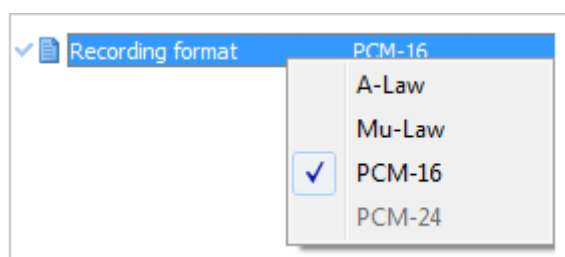
9.4.4 Recording Format

Figure 21: Recording format shortcut menu

Recording format shortcut menu (Figure 21) is used for setting audio compression format:

- PCM 16 bits, no compression (cannot be used for 44100 Hz sampling rate);
- PCM 24 bits, no compression (cannot be used for 32000 Hz and 44100 Hz sampling rate);
- A-law compression;
- μ-law compression.

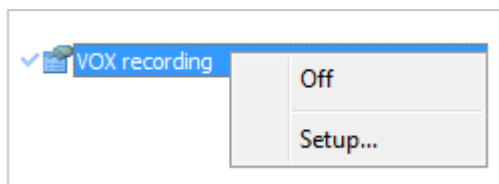## 9.4.5 Volume-Triggered (VOX) Recording

Figure 22: Volume-triggered (VOX) recording shortcut menu

To open the **VOX setup** dialog (Figure 22), click the **Setup** option of the VOX recording shortcut menu (Figure 23).

In the volume-triggered mode recording process starts automatically as soon as volume level reaches specified triggering threshold.

For more convenient adjustment, the application features an indicator displaying **Current signal level**. The indicator 🟢 marks when signal reaches the threshold.

> Volume-triggered recording mode (VOX) operates only left channel signal sources. If signal source for the left channel is not specified, the application will display an error message in the relevant area of the main screen (**3** on Figure 17). Thus, recording with these settings will not be carried out.
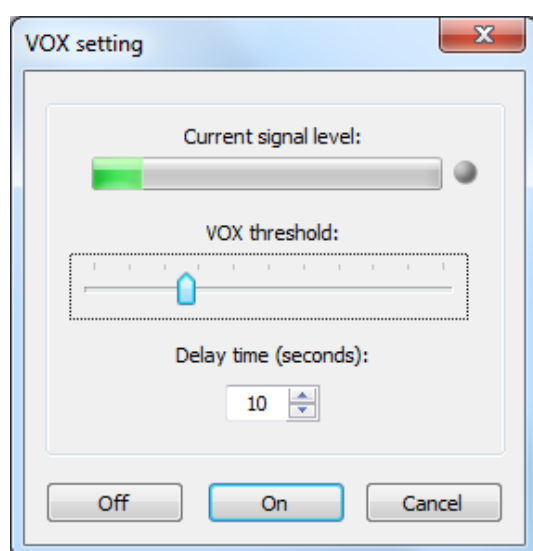

Figure 23: Volume-activated recording dialog

Use **VOX threshold** slider to set the triggering threshold.

In the **Delay time (seconds)** box specify time period during which the device will keep on recording after volume level falls down below the triggering threshold. The default value for this parameter is 10 seconds.

Click **On** to apply changes and enable the volume-triggered (VOX) recording mode.

Click **Off** to close the dialog and disable the volume-triggered (VOX) mode.

To close the dialog and cancel the current selection, click **Cancel**.
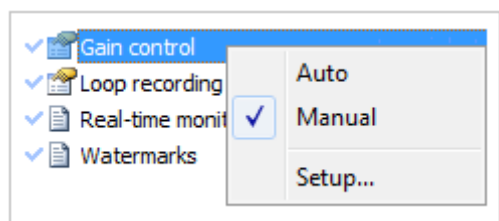
9.4.6 Gain Control

Figure 24: Gain control shortcut menu

Gain control shortcut menu (Figure 24) is used for selecting gain control type and specifying manual control parameters.

In the **Gain control dialog** (Figure 25), select one of two **Types**.

Tick the **Manual** option to enable **Left channel** and **Right channel** setting areas for manual adjustment.

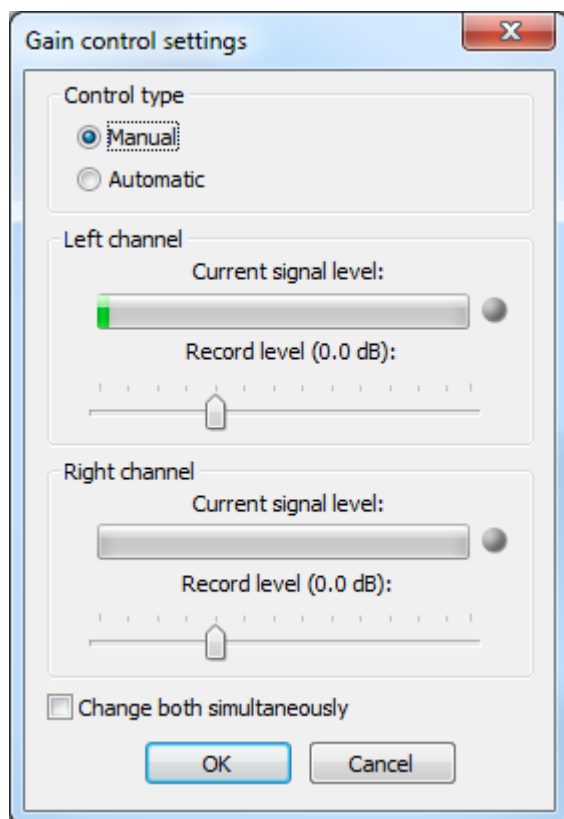Tick the **Change both simultaneously** checkbox to adjust both channels at the same time.

Figure 25: Gain control settings dialog

Current signal level indicator shows the current input signal level.

🔴 indicator informs on possible input signal overload that might result in signal distortions.

Set the gain level for one or both channels using the slider. Possible values for this parameter are from -20 to +44dB.

Tick the **Automatic** radio button to set automatic gain control (manual gain control adjustment for both channels will be disabled).

Click **OK** to apply changes.

To close the dialog and cancel the current selection, click **Cancel**.
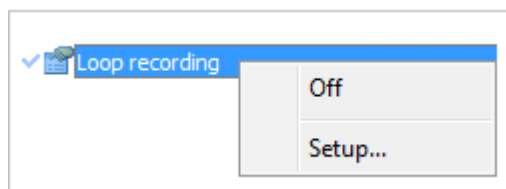
9.4.7 Loop Recording

Figure 26: Loop recording shortcut menu

Loop recording shortcut menu (Figure 26) is used for enabling/disabling loop recording mode and setting loop recording duration. Once the recording reaches the specified time limit, the device will overwrite previously recorded data starting from the beginning.
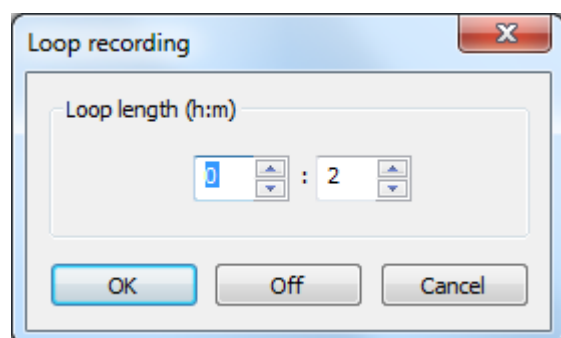

Figure 27: Loop recording dialog

Click the **Setup** shortcut menu option to open **Loop recording** dialog (Figure 27). Adjust the **Loop duration (h:m)** parameter. Click **OK** to enable loop recording mode with specified parameters. Click **Off** to disable this mode. Click **Cancel** to cancel the current selection and close the dialog.

In the loop recording mode the recording session will not exceed specified time limits. In case the specified loop duration exceeds 2 GB, you will see a message suggesting reducing loop duration. A file recorded in the loop mode cannot exceed 2 GB.
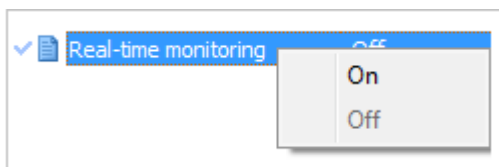
9.4.8 Real-time Monitoring

Figure 28: Real-time monitoring shortcut menu

Real-time monitoring shortcut menu (Figure 28) is used for enabling and disabling real-time monitoring mode.
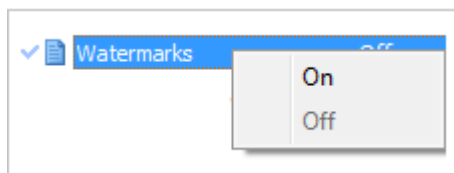
9.4.9 Watermarks

Figure 29: Watermarks shortcut menu

Watermarks shortcut menu (Figure 29) is used for embedding watermarks into audio files.

> With the **Watermarks** mode enabled, SNR becomes 3dB lower and the batter discharges 10 %-15 % faster while recording.

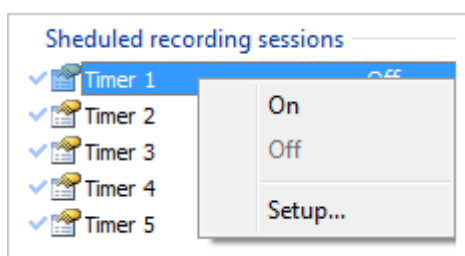## 9.4.10 Scheduled Recording

Figure 30: Scheduled recording shortcut menu

The **Scheduled recording sessions** area allows you to enable or disable timer triggered recording. Five timers enable up to five recording sessions set in advance.

Before enabling a timer you are recommended to set the recording time. In the shortcut menu of a selected timer, for example, **Timer 1**, select the **Setup** option (Figure 30).
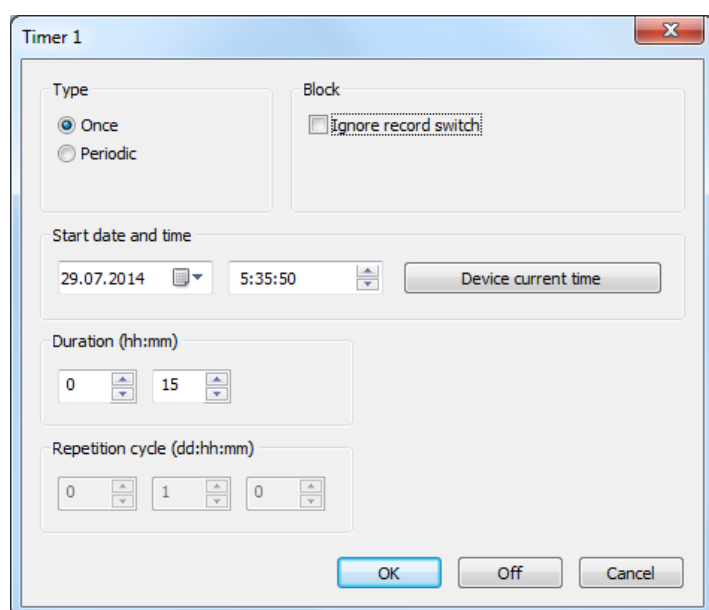

Figure 31: Adjusting timer recording

In the **Timer 1** dialog (Figure 31) select one of the **Types**: **Once** or **Periodic**.

If the **Once** option is selected, specify start date and time in the relevant setting areas.

The **Device current time** option enables quick current device time setting for further time adjustment.

For setting **Periodic** recording type you also need to specify **Repetition cycle**.

To prevent accidental timer recording disabling, set the timer priority over manual recording switch. To do so, tick the **Ignore record switch** checkbox. After doing so the recording process will be impossible to stop with the switch slider located on the device case or with the remote control.

After all the parameters are set, click **OK** to enable the timer.

To disable timer, click **Off**.

To cancel all the current selections, click **Cancel**.

In case you set two periodic timers with the exact same parameters or if the device detects errors while applying timer parameters, you will see an error message in the area **3** of the application main screen (Figure 17).

Scheduled recording will not start if device memory is full. After you clear device memory, scheduled recording will start automatically.

During the recording pauses the battery accumulates charge. That is why if during periodic recording the battery discharges, audio files might be of shorter duration.
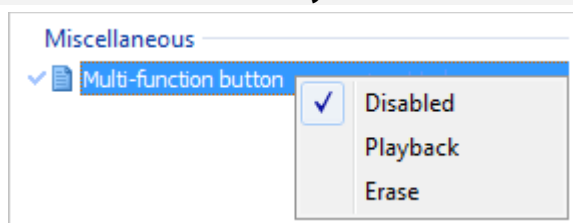
9.4.11 Erase/Playback Button

Figure 32: Erase/Playback shortcut menu

Erase/Playback button shortcut menu (Figure 32) is used for assigning the button (**7** on Figure 1) one of the following options:

- Disabled;
- Playback (to play the last recorded audio file);
- Erase (for quick memory formatting).

By default this button performs recording **playback**.
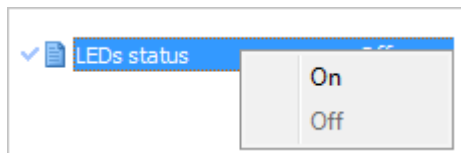
9.4.12 LEDs Status

Figure 33: LEDs status shortcut menu

LEDs status shortcut menu (Figure 33) is used for enabling/disabling LED indicator (**6** on Figure 1).

9.4.13 Profiles

Profile is a set of preconfigured device parameters that are stored in the device memory.

There are 3 types of profiles: *default profile*, *current profile* and *user profile*.

Default profile: a set device parameters configured by manufacturer that cannot be changed.

Current profile: a profile that is loaded automatically after switching the device on.

All user settings performed via **Voice Recorder Manager** are saved automatically to the current profile and device memory.

User profile involves recorder parameters specified can be saved and loaded by means of the **Save profile** and **Load profile** options.

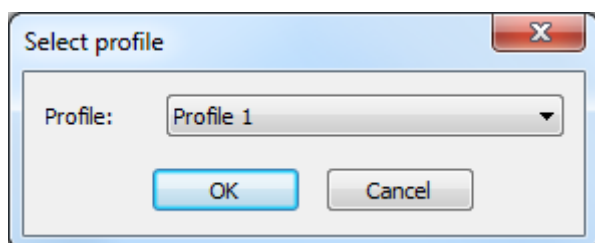You can generate up to three user profiles.

Figure 34: Saving a profile

To create and save a profile, configure needed parameters and click **Save profile**.

The **Select profile** dialog will show up (Figure 34).

Use drop-down list to select one of the three profile names: **Profile 1**, **Profile 2** or **Profile 3**.

Click **OK** to save a profile to device memory and apply it as current profile.
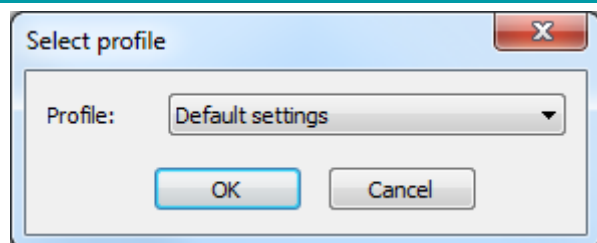
Figure 35 : Loading a profile

To apply one of the profiles to the device, do the following:

Click **Load profile**. In the dialog (Figure 35) select one of the profiles.

Click **OK** to confirm. The selected profile settings will be applied to the device.

If you want to change a previously created profile, you need to load this profile first to the **Voice Recorder Manager**. To do so, click **Load profile**.

Follow the instructions described in this section.

9.4.14 Changing PIN

PIN is not set by default.

You can set PIN code to secure access to device and its settings.

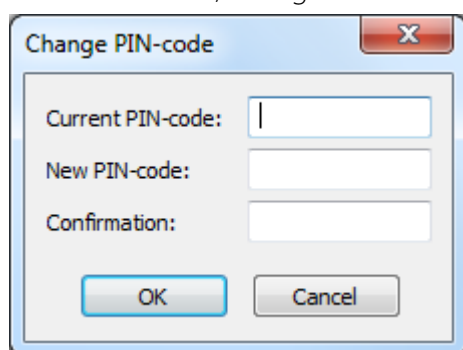In order to create, change or disable PIN, click **Change PIN.**

Figure 36: Changing PIN

Change PIN-code dialog will show up (Figure 36).

While setting PIN for the first time, leave the **Current PIN-code** input box empty. In the **New PIN-code** box, specify digits (from 1 to 8) you want to use as PIN, confirm your PIN by entering the same set of digits in the **Confirmation** input box, and click **OK**.

To change PIN, fill in all input boxes in the dialog (Figure 36).

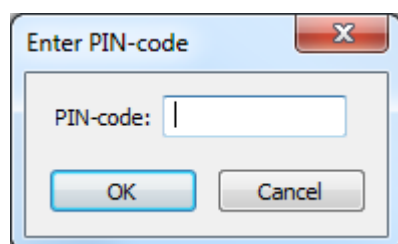To disable PIN, leave the **New PIN-code** and **Confirmation** boxes empty.

Figure 37: Enter PIN-code dialog

After the code is set the application will require entering PIN the next time you connect the device to PC.

In the dialog (Figure 37) enter PIN in the relevant box and click **OK**.

For security purposes you are recommended to use at least four digits for PIN.
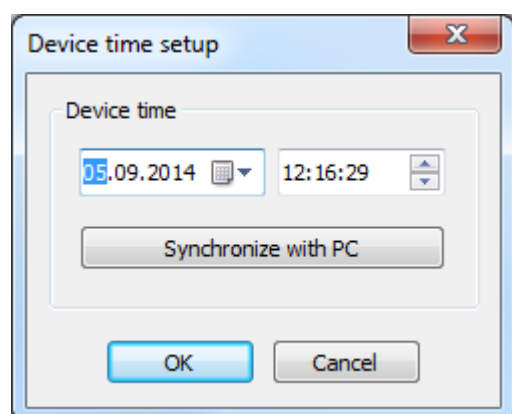
9.4.15 Setting Device Time

Figure38: Device time setup

Time and date of the connected device are displayed in the **Device time** area **5** of the **Voice Recorder Manager** main screen (Figure 17).

To set device time and date, click the **Adjust** option, located in the application main screen **Settings** area.

In the **Adjust time** dialog (Figure 38), specify current time and date in the relevant input box.

Click **Synchronize with PC** is you want to synchronize device time with the time on your PC.

To save changes and apply them to your device, click **OK**; to cancel the current selection, click **Cancel**.

9.5   Recordings

The **Recordings** area is used for playing back and deleting recordings (*wav* files) stored in the device memory.

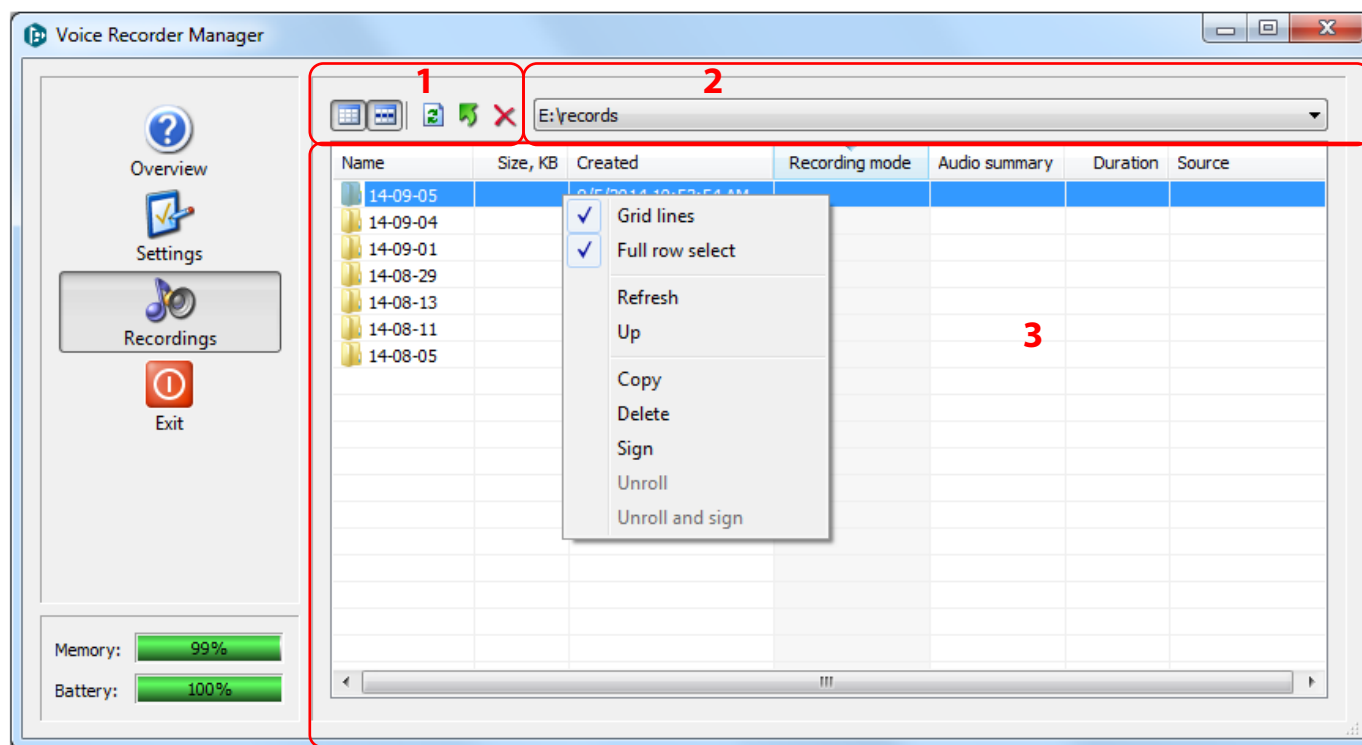To open the **Recordings** area, click 🎵 in the main screen (Figure 39).

Figure 39: The Recordings area shortcut menu

9.5.1   The Recordings Area

Apart from **Overview** and **Device state**, the **Recordings** area contains the following controls (Figure 39):

1: Tool bar;

2: Folder selection drop-down list;

3: List of recordings.

9.5.2   Toolbar

Below you can see a table with icons, their description and relevant shortcut menu options:

Icon	Shortcut menu option	Description and purpose
▦	Grid lines	Display grid of the recording list
▤	Select string	Select the whole string
↻	Refresh	Refresh recording list
↰	Up	Go one level up
✕	Delete	Delete selected recordings

Figure 39 displays the **Recordings** area of the application main screen with the **Grid lines** and **Full raw select** options enabled.

9.5.3 Recording List

PC detects connected recorder as FAT32 external memory.

The **records** folder is created automatically in the device memory and contains recorded audio files. Files are located in the internal folders that are named in the **yy-mm-dd** format, for example **08-10-31**.

To operate audio files, open the **records** folder and then click on the folder with file you want to open. Once the needed folder is open, the list of recordings and their main features will be displayed:

Name. Name of the recording, for example: **rec_0000.wav** or **rec_0001.rng** (loop recordings).

Size, KB. Recording size in kilobytes.

Created. Date and time the recording began.

Recording mode. The way the recording was triggered:

> **M**: Manually;
>
> **T**: Scheduled Recording;
>
> **V**: volume-triggered recording;
>
> **L**: Loop recording.

Audio summary. Sampling rate, mono/stereo, compression type.

Duration. Recording duration.

Source. Recording source.
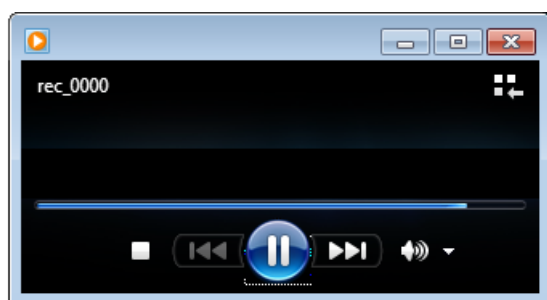
9.5.4 Recording Playback

Figure 40: Windows Media player dialog

The **.rng** recordings cannot be played back before their conversion to other format.

Double-click a recording you want to playback (Figure 39). The default media player of your PC will start playing back the recording. For example, default Microsoft Windows media player for **wav** files is Windows Media (Figure 40).
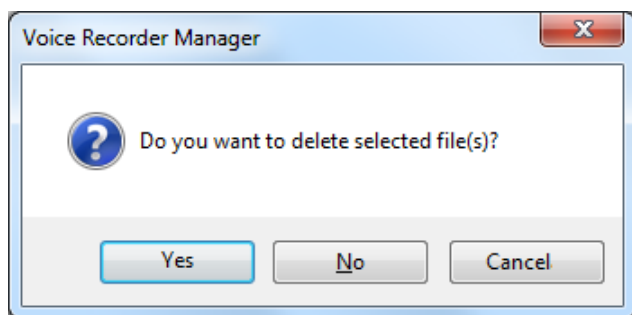
9.5.5 Deleting Recordings

Figure 41: Deleting recordings from device memory

To delete a recording, select it in the list and click ✖ icon located in the tool bar or click **Delete** in the shortcut menu (Figure 39).

Confirm or cancel the deletion in the dialog (Figure 41).

9.5.6 Copying Files to PC

Copying files that are not protected with PIN to PC can be performed with built-in Windows tools.

In case files are protected with PIN, you can access the recordings only after entering PIN in **Voice Recorder Manager**.

You can copy particular audio files or whole folder with recordings.

Select file or folder you want to export to PC via **Voice Recorder Manager**, open shortcut menu, and click **Copy** (Figure 39). Or select an object and drag it to a folder on your PC.

To copy an **.rng** file and convert it into the **.wav** format, select the **Unroll** option of the shortcut menu (Figure 39).

9.5.7 Digital Signature

You can generate digital signature for an audio file while copying it to PC hard drive. To do so, open shortcut menu of a file you want to create digital signature for and click **Sign** (Figure 39).

To create digital signature for *.rng* files, open shortcut menu and click ***Unroll and sign*** (Figure 39).

In the **Save as** dialog (Figure 42), specify location for a digital signature file. Digital signature file has the same name as audio recording and has the *.dsg* extension.
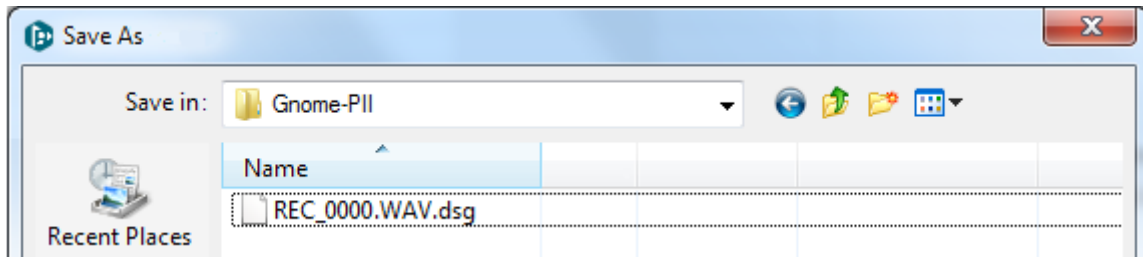

Figure 42: Saving digital signature file

9.6 Exiting the Application

To close the application, click ⏻ **Exit**, ☒ located in the tool bar or press **Alt+F4**.

> You must close the **Voice Recorder Manager** application before starting recording process.

10 KNOWN ISSUES AND TROUBLESHOOTING

In the process of driver installation or updating you may see the following error messages: This driver cannot be installed on your PC or The driver you are trying to install is not compatible with your Windows version.

Errors may occur if:

In the process of installation you have selected driver with wrong bitness.

Previous driver versions that are not compatible with your Windows version were tried to be installed on your PC.

In case any of the mentioned errors take place, first of all make sure the driver you have installed is compatible with your Windows bitness and version.

If the wrong driver has been installed, you need to reinstall the driver (make sure you select the one compatible with your OS).

If the driver has been installed correctly but error messages still show up, delete the driver, reboot your PC, and try to reinstall the driver.

11 OPERATING CONDITIONS

The recorder is designed to be used under the following operating conditions:

Environment temperature: minus 5 to plus 40 ℃;

Relative humidity: up to 80% at +30° C;

> ⬢❗ The most fragile recorder part is microphones. Avoid storing and operating the device in humid or dusty conditions. Keep the device away from liquids.

12   TANSPORTATION AND STORAGE CONDITIONS

The recorder must be transported in original manufacturer package by automobiles, railway boxcars or cargo vessels, according to shipping rules for respective type of transport.

Ambient temperature for storing the recorder in manufacturer package in an enclosed, heated and ventilated industrial facility or other areas should range from 5 to 40° C. Relative humidity may not exceed 80 %.

13 MANUFACTURER WARRANTY

The recorder liability amounts to at least 10000 h.

The device service life amounts to at least 5 years (without regard to battery service life).

The device must be used strictly is accordance with operating, storage and transportation conditions described above.

The Manufacturer guarantees product conformity with the specifications unless any of the operating, storage and transportation conditions was violated.

The warranty period is 12 months from the date of delivery.

The Manufacturer shall perform product warranty maintenance with no extra cost for the Customer. Warranty maintenance means product performance recovery in case of product failure that is not in any way related to product misuse within the warranty period.

In case of any defects and/or inconsistencies discovered within the Warranty Period, please send a complaint letter to: STC Ltd, PO Box 124, Saint Petersburg, 196084, Russian Federation.

14 CERTIFICATE OF ACCEPTANCE

Gnome-P II STC-H661 Portable Digital Stereo Recorder

No_____,
manufactured and accepted in compliance with required standards and valid technical documentation and classified as fit for use.

Head of Quality Control Dept.

Stamp Here   _____   _____
                                              Signature   *Print Full Name*

                                  _____
                                         Date (DD/MM/YYYY)

Shipping Date

                     _____   _____   _____
                              day, month, year   Signature   Print full name
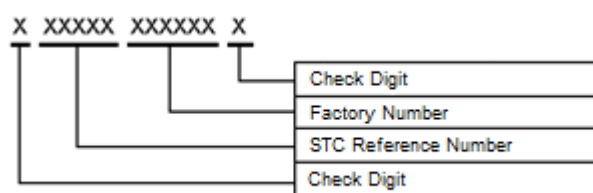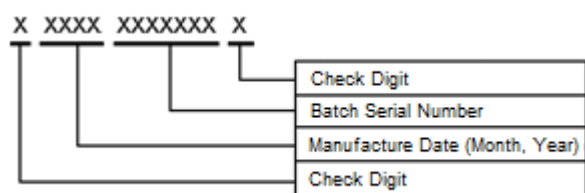
Batch Number and Device Number Breakdown

006-110518