
Gnome-Pico

Digital Stereo Recorder

Operation Manual

Note to Customer

This Manual describes device purpose and functionality, explains how to use device features, lists specifications and controls, and contains all information you need to use the device efficiently and safely.

Gnome-Pico Digital Stereo Recorder has three case options: badge, access card and credit card

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

This Manual may not include some last-minute upgrades.

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 emails: support@speechpro.com
gnome@speechpro.com

You can also reach us by phone:

Saint Petersburg

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

Fax: +7 (812) 327-92-97

Moscow

Phone: +7 (495) 661-75-50

Fax: +7 (495) 661-75-17

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

When contacting our Technical Support, please include the following details into your call/ticket:

- Product name and version;
- Manager version;
- Detailed issue description.

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.

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INTRODUCTION

Typographic Conventions

The following typographic conventions are applicable to this Manual:

Formatting	Description
Normal	Guide body text
Bold	Used to highlight component names, as well as interface element names (headers, buttons etc.).
<i>Bold Italic</i>	Indicates <i>file names</i> and <i>access paths</i> .

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

GNOME is a registered trademark of Speech Technology Center.

Windows® is a trademark of Microsoft® Corporation.

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

Legal Warning

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

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

1 BASIC DETAILS

Product Name	Version	Case Design
Gnome-Pico Digital Stereo Recorder	STC-H650H	Badge
	STC-H650V	Access card
	STC-H650K	Credit card
	STC-H650HH	Badge + HID
	STC-H650VH	Access card + HID
	STC-H650KH	Credit card + HID

Manufacturer:	Speech Technology Center, Ltd.
Address:	4a Ul. Krasutskogo, 196084, Saint Petersburg
Phone:	+7 (812) 325-88-48
Fax:	+7 (812) 327-92-97

2 DEVICE INTENDED USE

Gnome-Pico Digital Stereo Recorder is a professional audio recording device designed for mono and stereo recording in difficult acoustic environment.

Its small size, user-friendly design and smart functionality make it perfect for a wide range of users. This out-of-the-box solution ensures superb audio quality when recording both indoors and outdoors.

The device records sound via one or two built-in microphones and stores files on the internal flash memory. Recording process may be controlled both manually and automatically.

When the device is connected to a PC, you can play back recorded data, copy recordings to PC hard drive and change recorder options by means of **Voice Recorder Manager**.

3 OPERATING CONDITIONS

Follow all safety instructions to ensure proper operation of the device. The manufacturer assumes no liability for damages resulting from non-compliance with the following safety instructions:

- Environment temperature: minus 5 to plus 40 °C;
- Relative humidity: up to 80%.
- Atmospheric pressure range: 84 to 107 Kips (630 to 800 mm Hg).

The package containing the recorder should be fixed to avoid any cargo movements and/or shocks.

Keep the recorder clear of moisture, acid, alkali vapor and other aggressive liquids that cause metal corrosion. Do not store the recorder near strong electromagnetic field sources.

4 DATA PROTECTION

To protect recorded data from unauthorized access, key recorder features (deleting recorded data, modifying recording options, saving and playing recordings on a PC) can only be performed by means of **Voice Recorder Manager**. If required, the access to recorded data stored on device may also be protected with a PIN.

After copying data to a PC hard drive, recorded data authentication is enabled via digital signature.

5 SPECIFICATIONS AND SCOPE OF SUPPLY

5.1 Specifications

Spec	Value
Number of channels	1 or 2
Internal hard drive space	2 GB
Recording standard	Mono/stereo, PCM 16/32 bit
Sampling rate	8, 16, 32 kHz
Microphone type (2 built-in microphones)	MEMC, digital
Internal microphone sensitivity	- 28 ± 3 dBFS
Dynamic range	90 ± 3 dB
Equivalent acoustic noise level	32 ± 3 dBA
Total harmonic distortion per 105 dB SPL (Stereo, 16-bit PCM, 16 kHz sampling rate)	0,9 ^{+1,50} _{-0,85} %
Operation duration without charging with default recording settings (Mono, 16-bit PCM, 8 kHz sampling rate)	14 h
Recording duration into a built-in memory (Mono mode, 8 kHz sampling rate)	36 h
PC connection standard	USB 2.0
Supported Microsoft® Windows versions	7, 8, 10
Case material	Plastic
Case design	Badge, access card, credit card
Dimensions	85.4x53.4x2.5 mm
Weight (battery included)	20 ± 5 g

5.2 Package Contents

Title	Qty.	Note
Gnome-Pico Digital Stereo Recorder, internal battery, 2 Gb built-in memory	01	1
Docking station for connecting a single recorder to PC		1
Docking station for connecting multiple (up to 4) recorders to PC		1
Manager software and recorder driver CD	01	
Shipping box	01	
Operation Manual	01	2
Notes:		
1. Type and quantity are determined in the purchase order.		
2. May be supplied on a CD.		

6 RECORDER DESIGN

6.1 Control Units, Indicators and Switches

The recorder comes in a white plastic case and is designed as a badge, access card and credit card. Device exterior with indication of parts is shown on Figure 1. Unlike badge case design, device designed as a credit card does not have a fixing hole.

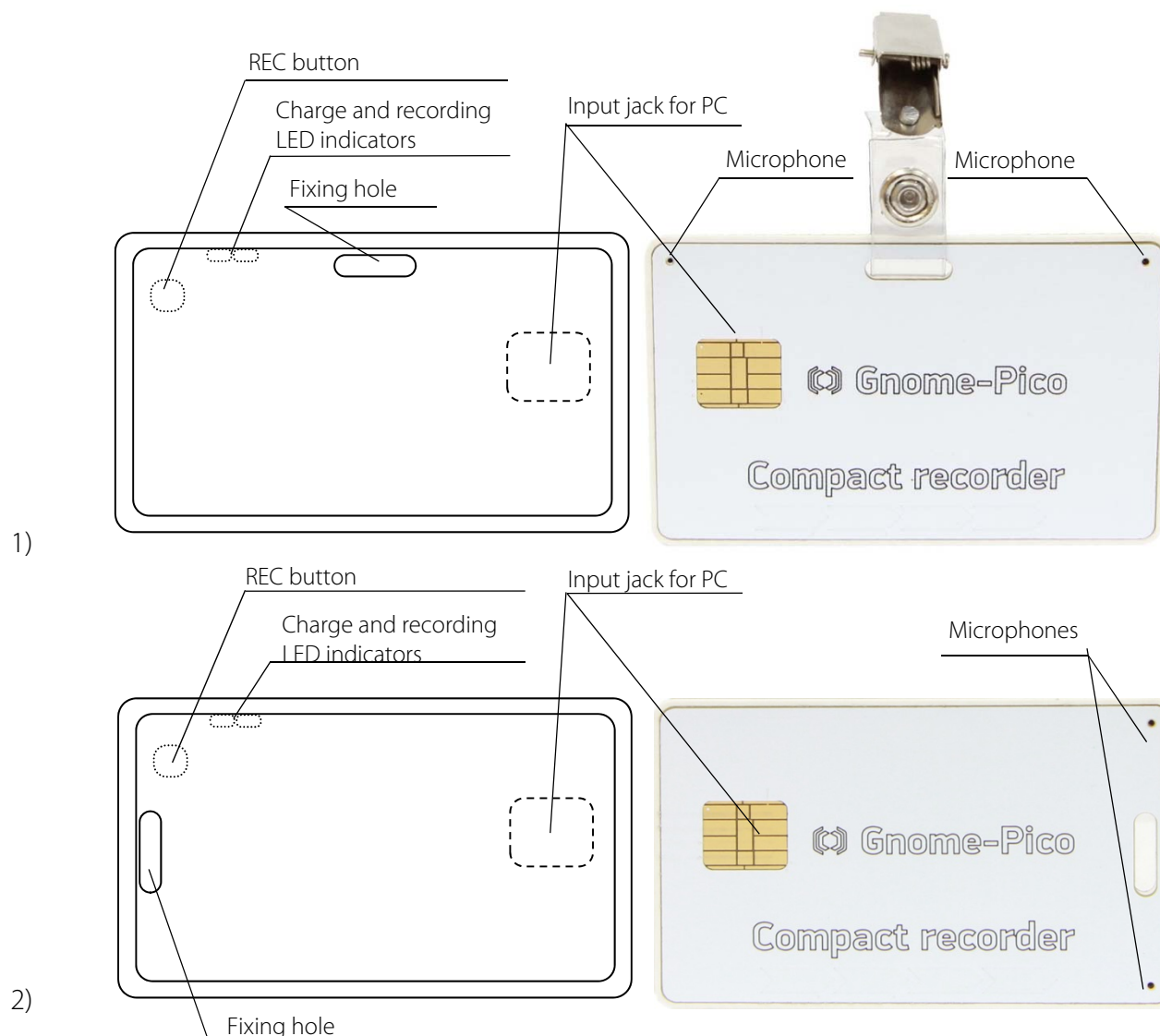


Figure 1: Product exterior.
1. Badge case design; 2. Access card case design.

6.2 Device Memory

Audio data is written to and stored on a built-in nonvolatile 2 GB flash memory unit. The storage keeps audio data for at least 10 years when the device is shut down. Recordings can be deleted from device memory by means of the **Voice Recorder Manager** application.

6.3 Docking Station for PC Connection



Figure 2: Docking Station for PC Connection:
1: for a single recorder 2: for four recorders.

Connect the device to a PC by means of a docking station and a USB cable. A docking station may house either one or four recorders.

Figure 2 details docking station exterior.

Insert the recorder into the docking station, so that the input jack goes in, with the front side upwards.



Up to 32 recorders can be connected to a PC at the same time.

Make sure to stop the recording process before connecting the recorder to the docking station. In case you fail to do so, **Voice Recorder Manager** will not detect the device.

6.4 Power Supply

The voice recorder is powered by a built-in 130 mAh Li-ion battery. Power consumption while recording does not exceed 10 mA.

Minimum power consumption amounts up to 1 mA in the standby mode. The recorder also switches to standby mode when battery charge drops below the critical level.



Once the device battery is fully discharged and the device shuts down, date and time are reset automatically. You can set them again by means of **Voice Recorder Manager**.

6.5 Battery Charge

The recorder battery is charged through an external power source (a battery charger or a USB port). Maximum battery charge current is 150 mA; full charge may take up to 2 hours.

When charging the recorder from your PC USB port, consider the following: in case the current in the port is lower than expected or several devices are connected to a port at the same time, you may experience temporary connection issues.



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 charging the battery for at least 2 hours.



To prevent battery failure due to excessive discharge, charge the battery at least once a month in case the recorder has not been used for a long period of time, as well as every time after intense device usage.

Once battery is fully charged, unplug the charger or the USB cable.

7 OPERATING THE DEVICE

7.1 Default Settings

Once powered on for the first time after the purchase, the recorder starts operating with the following default settings:

- Button-triggered recording;
- Stereo recording mode;
- 16 kHz sampling rate;
- 16 bit PCM¹;
- 24 dB input gain level (x16);
- LED indication ON;
- Volume-triggered recording OFF;
- Loop recording OFF;
- Date and time not set;
- Timers OFF.

7.2 Custom Settings

To configure custom device settings, follow the steps below:

- Install the software supplied on CD on your PC;
- Connect the recorder to your PC using a USB docking station;
- Run Voice Recorder Manager;
- Configure the settings;
- If required, change or delete the PIN.

7.3 Basic Recording Guidelines

The device performs sound recording in PCM 16-bit or 32-bit format without compression. Use no-compression mode with 32 kHz sampling rate. High sampling rate and stereo recording mode keep the sound natural and intelligible even in noisy environments.

When using mono recording mode, please bear in mind that the signal will be captured with a single microphone only.



Do not enable recording mode while the device is connected to PC USB port. In this case, the recorder will disconnect from PC and start recording the signal into its internal memory. Because of PC interference of 5 V, you may experience poor audio recording quality.

To prevent data losses, use volume-triggered recording mode only if input signal level is stable and predictable.

When recording, place the device the closest possible to the useful signal (speech) source, but no closer than 0.2 m, and the furthest possible from acoustic and electromagnetic interference sources. The closer the recorder is placed to the acoustic signal (speech) source, the smaller the reverberation (echo) will be and the higher gain level and speech intelligibility will be achieved.

¹ **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.

Place the recorder in a particular way so that any vibratory and/or shock loads, as well as intense microphone side friction against clothes and other objects (especially while moving) may be avoided. Furthermore, try to avoid device case direct contact with hard surfaces, such as tabletops, car bodies, walls, etc. Microphones are the most sensitive part of the device, that is why you are also advised neither to use nor to keep the recorder under excessive humidity or dust level, as well as to avoid liquid ingress to the microphones and/or inside the device case.

Recording process may be controlled both manually and automatically – by scheduler and volume-triggered recording mode (VOX).

7.3.1 Starting and Stopping Recording Manually

You can start recording both automatically and manually.

To manage recording manually, you can use the button located on the device case (Figure 1). This mode is enabled by default.

While starting the recording, the red LED will blink several times, depending on the current battery charge level. Time between blinks amounts to 0.5 s.

Battery Charge Level	Number of Blinks
up to 25%	1
25 to 49 %	2
50 to 74 %	3
75 to 98 %	4
99 to 100 %	5



In case the charge level LED blinks 3 times each 0.05 s and the recording is not starting, this might mean one of the following:

- Battery is fully discharged
- Memory is full
- The device is out of order

While recording, a green LED indicator on the device case blinks at regular intervals.



To manage recording options, use **Voice Recorder Manager**. You can disable LED indicators if:

- Recording indicator is OFF
- Manual recording ON/OFF is disabled
- Device operates in the timer mode

7.3.2 Volume-Triggered Recording Mode (VOX)

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

- Enable this mode while configuring recording parameters and set recording On/Off thresholds (see section 8.3.6);
- Push the REC button located on a device case (see Figure 1).

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 (see Figure 1).

To stop a voice-triggered recording, push again the REC button or slide left twice (opposite to the arrow direction).

Volume-triggered recording mode can be used in combination with the scheduled recording mode.

7.3.3 Timer Recording

Use timer-recording mode if you know the exact start and stop time of a recording session beforehand. It is useful when recording conferences, meetings, etc. This mode is especially handy if the situation does not allow you to operate the device manually. This mode lets you to start recording session automatically at any desired time using built-in timers. To enable a timer, configure the following settings (see Section 8.3.6.9 Scheduled (Timer) Recording):

- Set device time and date;
- Enable one or several timers;
- Set start date/time and duration for each recording session.

7.3.4 Loop Recording

In the loop-recording mode, audio data is recorded into a specified flash memory segment in the loop. 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 8.3.6).

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

7.3.5 Recording Duration

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

Mode	Recording duration with the sampling rate		
	8 kHz	16 kHz	32 kHz
A-law/ μ -law, mono	72 h	36 h	18 h
PCM 16 bit, mono	36 h	18 h	9 h
PCM 32 bit, mono	18 h	9 h	4.5 h
A-law/ μ -law, stereo	36 h	18 h	9 h
PCM16 bit, stereo	18 h	9 h	4.5 h
PCM 32 bit, stereo	9 h	4.5 h	2.25 h

7.4 Recording Playback and Deletion

Playing or deleting recordings stored on device internal memory may be performed only via **Voice Recorder Manager** (see Section 8.3.7 The Recordings Tab). You cannot delete recordings stored on device memory using native Windows features.



Once deleted from the device internal memory, the data cannot be recovered in any way.

7.5 RFID (HID Card) Emulation

The recorder (STC-H650HH, STC-H650VH, STC-H650KH models) features an embedded device for emulating a RFID-based HID card (HID iClass and HID Prox) used for personnel identification.



The emulation mode increases power consumption, which leads to shorter standby operation.

7.5.1 Copying HID Card Data

To copy HID card data and further card emulation, follow this instruction:

- Enable the emulation mode. To do so, press the button on the device case and hold it down for more than 3 seconds. You can also use **Voice Recorder Manager** to enable this mode. Once in the mode, the device red LED lights up for 3 seconds.
- Press the HID card you want to copy against the recorder front (Figure 3).
- Hold up the recorder together with the card you are about to copy to the access card reader.



Figure 3: The correct way to locate a HID card and the recorder to copy card-encoded information.

Press the button on the device case and hold it down again for more than 3 seconds in the intercept mode to disable the emulation mode.



RFID antenna is located close to the recorder front panel. That is why the HID card you are intercepting must be placed between the recorder and a card reader. The recorder front panel must face the reader.



You cannot copy **Gnome-Pico** recorder data with another **Gnome-Pico** recorder.

After the recorder successfully copies card-encoded information, the red and green LED indicators will blink a few times.

That is how you know the recorder has copied HID card data.

Once the data is copied, the recorder operates in the HID card emulation mode.

You can view and change copied information in **Voice Recorder Manager**.

7.5.2 HID Card Emulation

To enable the emulation mode, copy host card-encoded information (see Section 7.5.1) or set the mode in **Voice Recorder Manager**.



RFID antenna is located close to the recorder front panel. That is why, when holding the recorder in the emulation mode close to the card reader, it is the recorder front panel that must face the reader.

8 VOICE RECORDER MANAGER

8.1 Gnome-Pico Software Features

The recorder comes with device drivers and the **Voice Recorder Manager** application.

To gain access to the whole range of device features, you will have to use **Voice Recorder Manager**.

Voice Recorder Manager is intended for managing the device and enables the following features:

- Performing standard set of operations (timer recording, volume-triggered recording mode and setting recording options);
- Connecting the recorder to a PC with Microsoft® Windows 7 or Windows 8.1 (32/64-bit) by means of USB 2.0 High-speed and docking station;
- Exporting recordings to a PC HDD using USB 2.0 High-speed;
- Recording deletion from the device memory;
- Monitoring battery level;
- Updating the device software.



Before starting the operation, it is highly recommended to disable the recording mode and start recording (in volume-triggered recording mode, timer-recording mode or with button) after exiting the application.

8.2 Installing the Software

8.2.1 Hardware and Software Requirements

To install the application on a PC running Microsoft® Windows 7 or Windows 8.1, you must have administrator privileges. The software is not compatible with other OS versions.

A native Microsoft Windows media player must be installed on your PC in order to play back .wav files.

Basic requirements:

- Microsoft® Windows 7/Windows 8.1;
- Available USB-port;
- CD-ROM;
- Audio I/O sound card;
- Mouse, keyboard;
- At least 2GB hard drive space for recording storage.

8.2.2 Driver Installation

To work with the **Voice Recorder Manager** application, first you must install the drivers that come with the device on the CD. The drivers can also be recorded in the device memory.



Only a user with administrator privileges can install the drivers.



PIN must be disabled before installing the drivers. Before installing the drivers, make sure the recorder is not protected with a PIN.

Connect your device to a PC by means of a docking station and, if required, insert the installation CD or open the relevant folder on the device storage once the system detects the recorder.

The following instruction describes installation process for Windows 7.

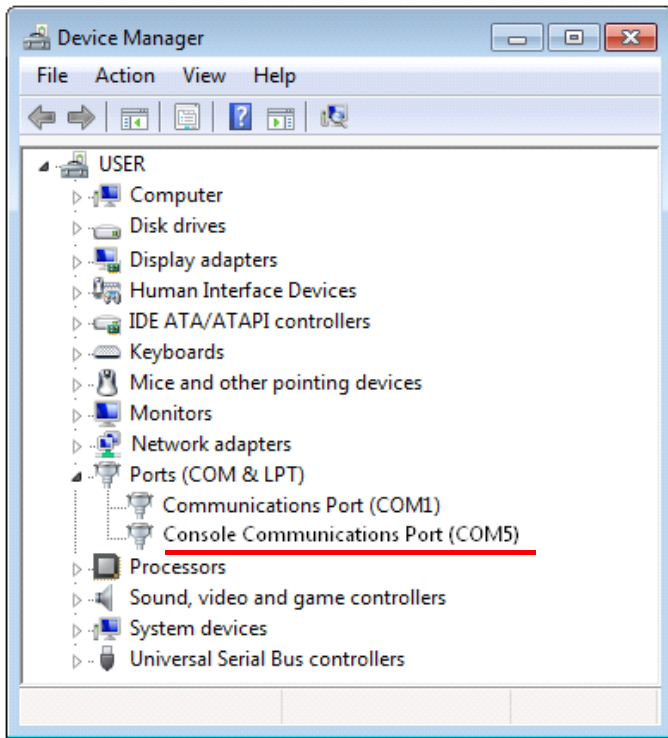


Figure 4: Gnome-Pico displayed in Device Manager.

- Select a relevant driver (it must be compatible with your OS) from the CD or recorder storage and launch it.
- Once the driver is installed, you must restart your OS to apply the changes.
- Open the Device manager → Hardware and Sound → Device Manager.
- If the driver is installed successfully, the device will show up in the **Device Manager** dialog (Figure 4) in the **Ports (COM and LTP)** section as **Console Communications Port**.

You do not have to install **Voice Recorder Manager**.

To turn on the application, click on the **Manager.exe** file.

8.3 Working with Voice Recorder Manager

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

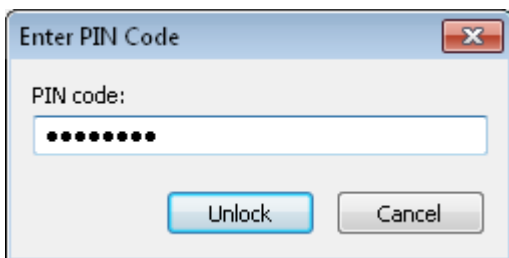


Figure 5: The Enter PIN Code dialog.

If access to settings of the connected device is protected with a PIN, you will see a dialog where you must enter the PIN and confirm it by clicking **Unlock** (Figure 5).



The default PIN code is **00000000**.

If the PIN code you have entered is correct and valid, you will see the **Voice Recorder Manager** main screen. All recordings stored in the device memory will be loaded as well.

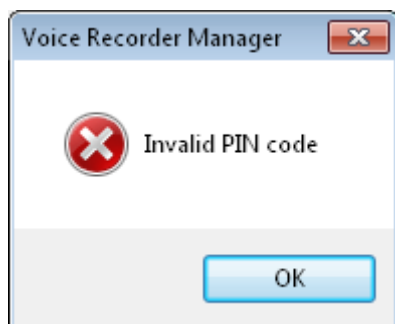


Figure 6: Invalid PIN code.

If you enter an incorrect PIN code, the application will alert you with the error message (Figure 6). Close the message box and enter the PIN code again.

8.3.1 Application Main Screen

The **Voice Recorder Manager** main screen (Figure 7) is composed of the application title, status bar and 4 client areas:

- 1 Main menu;
- 2 A list of connected devices;
- 3 Current client area: **Settings** or **Recordings**;
- 4 Playback control panel.

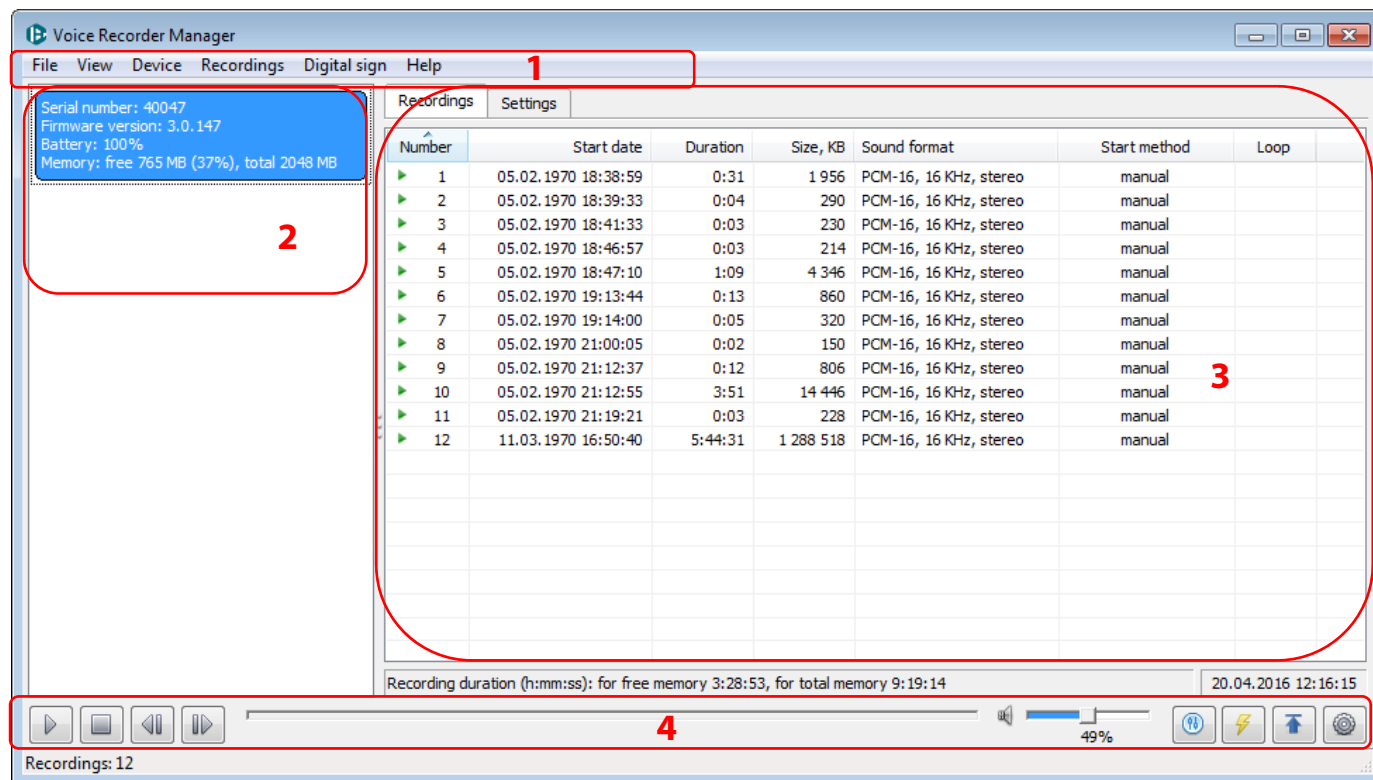


Figure 7: Application main screen.

8.3.2 Main Menu

The application main menu options are:

Menu	Option	Description
File	Scan for devices	Detects recorders connected to PC
	Exit	Closes the application
View	Status Bar	Shows/hides status bar
	Device List	Shows/hides the list of devices
	Player	Shows/hides player bar
Device	Set time	Opens the time setting dialog
	Set PIN code	Opens the PIN code-setting dialog
	Update firmware	Opens a dialog for device firmware update
Recordings	Play	Plays back a selected recording
	Export	Exports selected recordings to PC hard drive
	Delete all	Deletes all recordings from the device memory
Digital sign	Export public key	Opens the export public key dialog
	Authenticate	Opens the dialog for digital signature verification
Help	About Manager	Open a dialog with application info

8.3.3 List of Connected Devices

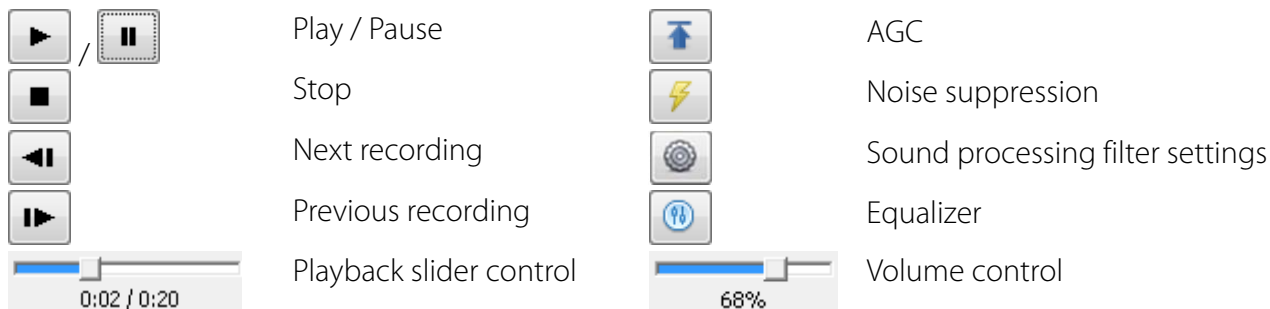
The list displays all devices connected to PC via docking station (or multiple docking stations). For each recorder, the application displays the following information:

- Device serial number
- Firmware version
- Battery charge status
- Free memory

Select a device you want to configure and double-click it.

8.3.4 Playback Control Panel

Playback Control Panel contains the following elements:



8.3.5 Client Area

Once the device is selected, the **Settings** and **Recordings** tabs become available.

Use the **Settings** tab to configure device parameters and operation modes.

On the **Recordings** tab, you can operate the recorded files stored in the device memory.

The bottom part of the client area contains a bar displaying free device onboard memory, current date and time.

8.3.6 The Settings Tab

The **Settings** tab displays device configuration (Figure 8).

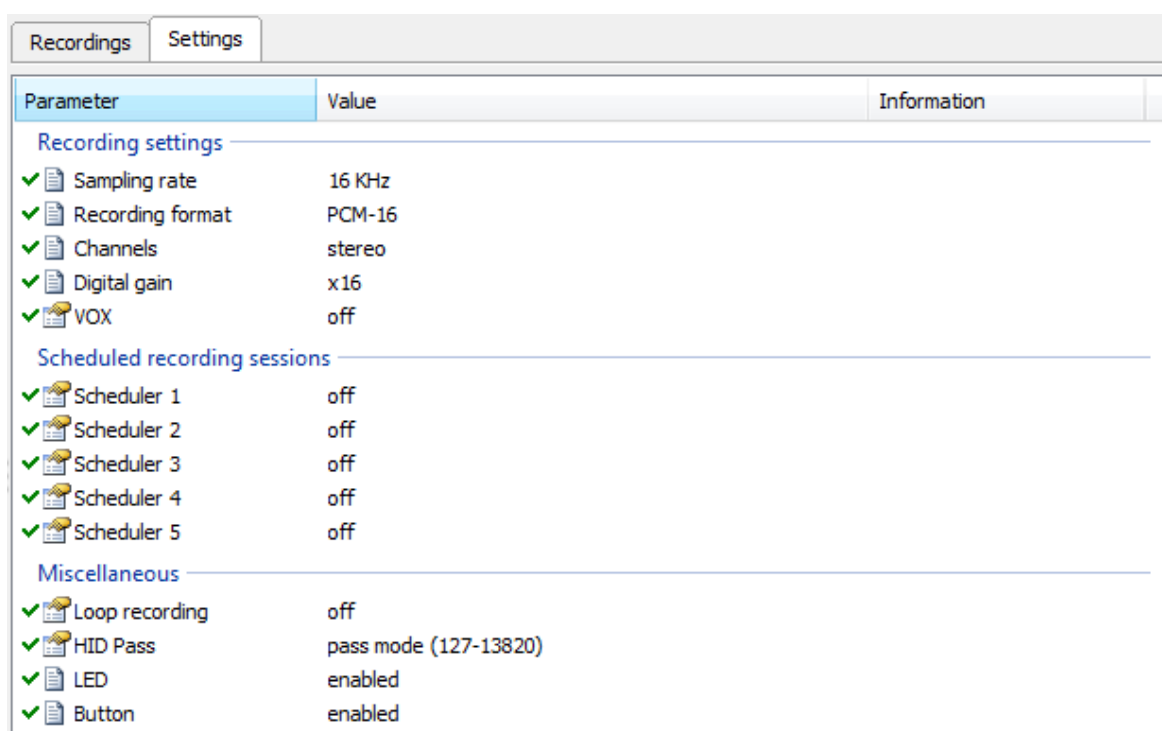


Figure 8: Settings tab.

Configuration is performed via shortcut menu or a dialog of each parameter.

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

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

Below you can see a complete list of adjustable parameters.

8.3.6.1 Setting Device Time

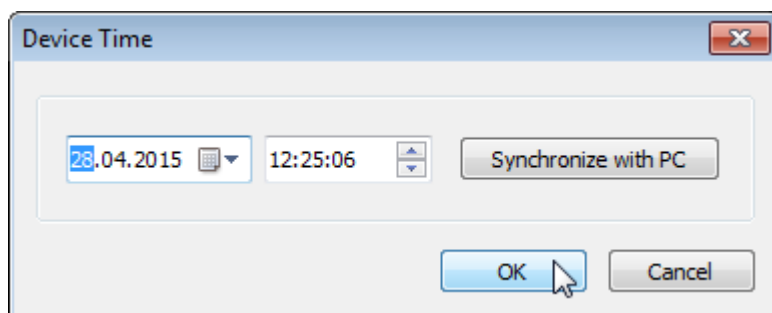


Figure 9: Setting device time.

To set device time, click the **Device** main menu option and select **Set time**.

In the **Device Time** dialog (Figure 9), specify current time and date.

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

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

8.3.6.2 Setting PIN Code



The default device PIN is **00000000**.

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

In order to set, change or disable PIN, click the **Device** main menu option and select **Set Pin code**.

The **Set PIN Code** dialog will show up (Figure 10).

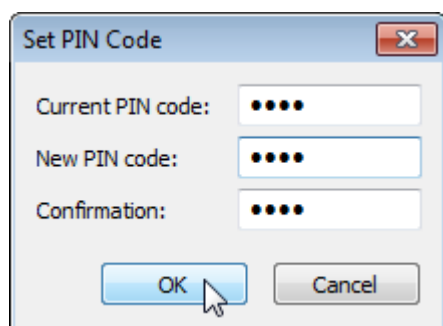


Figure 10: Setting a PIN code.

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 the 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 10).

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

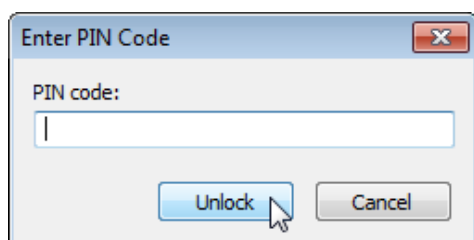


Figure 11: The Enter PIN Code dialog.

After the code is set, the application will prompt you to enter PIN the next time you connect the device to PC.

In the **Enter PIN Code** dialog (Figure 11), specify your **PIN** and click **Unlock**.



For security purposes, use at least a four-digit PIN.

8.3.6.3 Sampling Rate

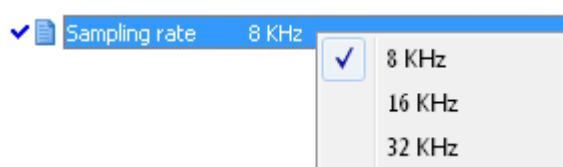


Figure 12: The Sampling rate shortcut menu.

Sampling rate shortcut menu (Figure 12) is used for setting audio signal sampling rate: 8, 16 or 32 KHz.

8.3.6.4 Recording Format

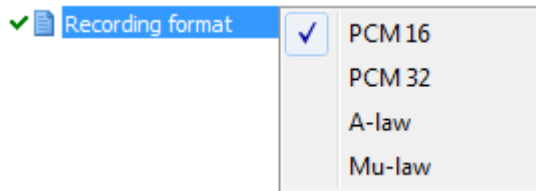


Figure 13: The Recording format shortcut menu.

Recording format shortcut menu (Figure 13) is used for setting audio compression format:

- PCM 16 bit, no compression;
- PCM 32 bit, no compression;
- A-law compression;
- μ -law compression.

8.3.6.5 Channels

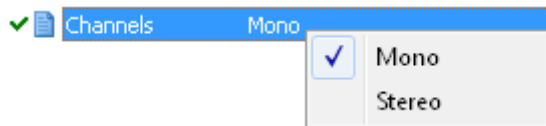


Figure 14: The Channels shortcut menu.

The **Channels** shortcut menu (Figure 14) is used for selecting audio recording mode:

- Mono
- Stereo

8.3.6.6 Digital Gain

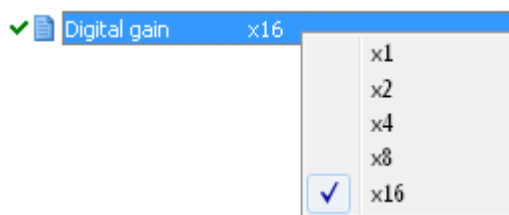


Figure 15: The Digital gain shortcut menu.

Digital gain shortcut menu (Figure 15) is used for setting digital gain value: 1, 2, 4, 8 or 16.

8.3.6.7 VOX

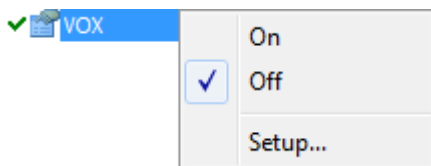


Figure 16: The VOX shortcut menu.

VOX shortcut menu (Figure 16) is used for enabling volume-triggered recording mode and setting its parameters (Figure 17).

With this mode enabled, the recording process begins as soon as volume level reaches the specified threshold (triggering threshold).

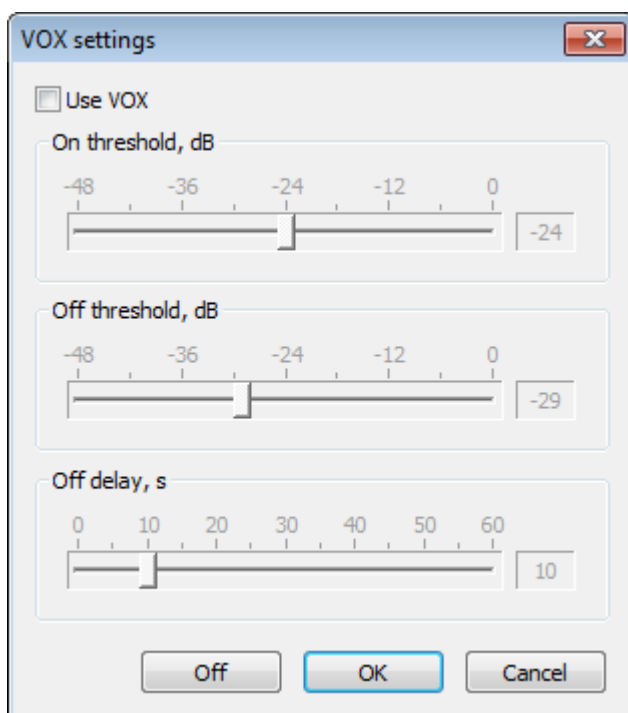


Figure 17: The VOX setting dialog.

To open the **VOX settings** dialog (Figure 17), click **Setup** in the **VOX** shortcut menu.

Tick the **Use VOX** checkbox to enable the volume-triggered recording mode (VOX).

Use the **On threshold** slider to set the triggering threshold (from 0 to -48 dB).

Use the **Off threshold** slider to set the tripping threshold (from 0 to -48dB).

Use the **Off delay** slider to specify the time during which the device will keep on recording after the volume level falls down below the triggering threshold. The default value is 10 seconds.

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

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

To close the dialog and discard changes, click **Cancel**.

8.3.6.8 LED Indicators

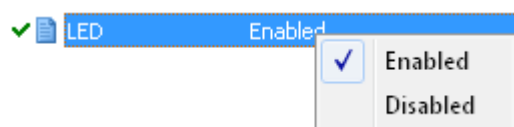


Figure 18: LED option shortcut menu.

The **LED** shortcut menu (Figure 18) is used for enabling/disabling LEDs on the device case that indicate operation modes and battery charge level.

8.3.6.9 Scheduled (Timer) Recording

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

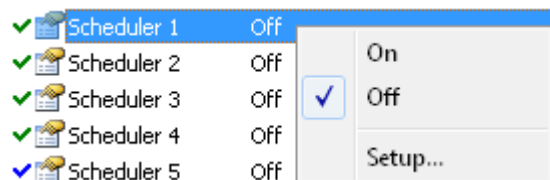


Figure 19: Scheduled recording shortcut menu.

Adjust the timer before enabling. Click the **Setup** option in a selected timer (scheduler) (for example, **Scheduler 1**) shortcut menu (Figure 19).

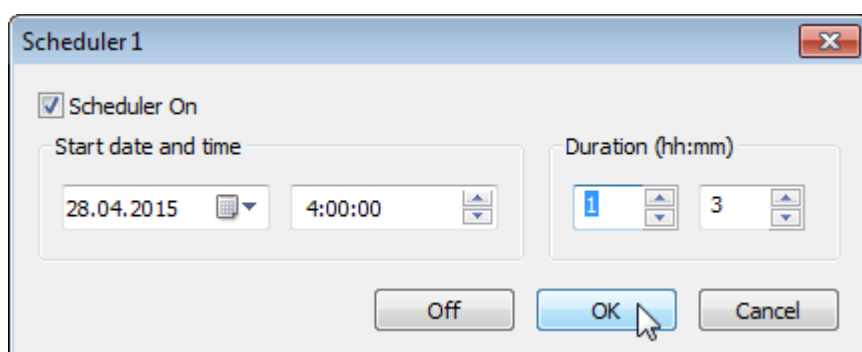


Figure 20: Adjusting a timer.

In the **Scheduler 1** dialog (Figure 20), tick the **Scheduler On** checkbox first.

Set **Start date and time** (dd:mm:yyyy, hh:m m:ss) and **Duration (hh:mm)**.

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

To disable a timer, untick the **Scheduler On** checkbox or click **Off**.

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



If the timer time matches the current time, the recording session will begin immediately,

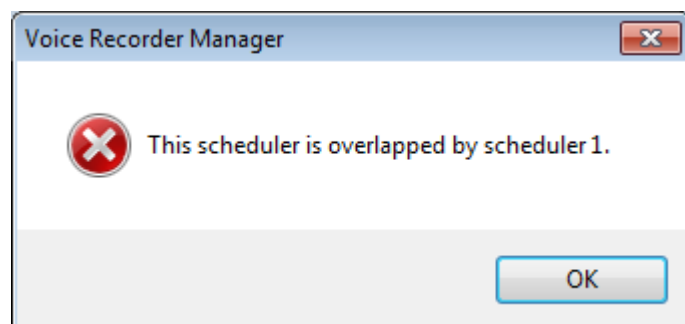


Figure 21: Error message of incorrect scheduler adjusting.

In case you set two periodic timers with the exact or not exact same parameters you will see an error message (Figure 21).

Click **OK** and edit the scheduler.

If you stop the scheduled recording session manually or in combination with the volume-triggered recording mode, this scheduler is functioning up to its total completion and cannot be overlapped by other scheduler.

In this case, manual recording control usually has higher priority over the scheduled recording sessions. If the button is unlocked, you can stop the scheduled recording with button.

If the button is locked, you cannot stop the scheduled recording 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 when you record crucial information or important data, the recording will not be accidentally stopped.



In the recording pauses, the battery accumulates the charge. That is why, if during periodic recording the battery is almost discharge, after a short pause you can record audio files of shorter duration up to the full battery discharge.

8.3.6.10 Loop Recording

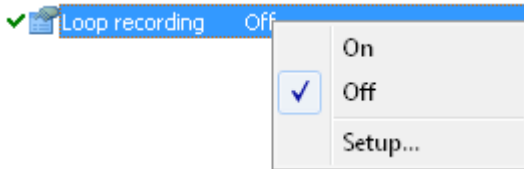


Figure 22: The Loop recording shortcut menu.

Loop recording shortcut menu (Figure 22) is used for enabling loop recording mode and setting loop duration. Once the recording has reached the specified time limit, the device will overwrite previously recorded data starting from the beginning.

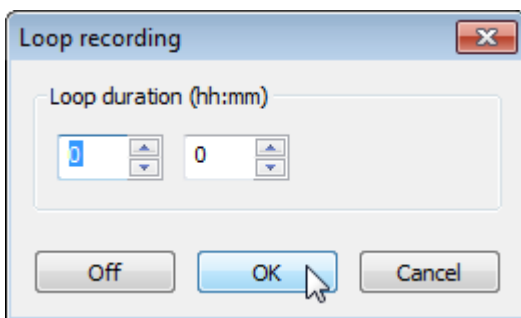


Figure 23: Loop recording dialog.

Click the **Setup** shortcut menu option to open **Loop recording** dialog (Figure 23). Configure the **Loop duration (hh:mm)** 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.



With the **Loop** mode enabled, the recording session will not exceed specified time limits. If a recording with specified parameters exceeds 2 GB, you will see a message informing you the file will have shorter duration. Loop recording size cannot exceed 2 GB.

8.3.6.11 HID Pass



Data copying and emulating a RFID-based HID card are realized only in STC-H650HH, STC-H650VH, STC-H650KH models.

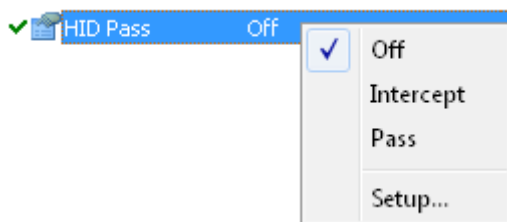


Figure 24: HID Pass shortcut menu.

Use the **HID Pass** shortcut menu to enable and configure data copying and HID card emulation (Figure24).

Select the **Setup** shortcut menu option to open the **HID Pass Setup** dialog (Figure 25).

To enable the HID card emulation mode, select the **Intercept** mode from the **Mode** group (Figure 25). Once the data is copied, the recorder operates in the HID card emulation mode.

To enable the HID card emulation mode manually, select the **Pass** mode and set pass parameters for **Code** and **Number**.

To disable the HID card emulation mode, select the **Off** mode in the **Mode** group or click the **Off** button.

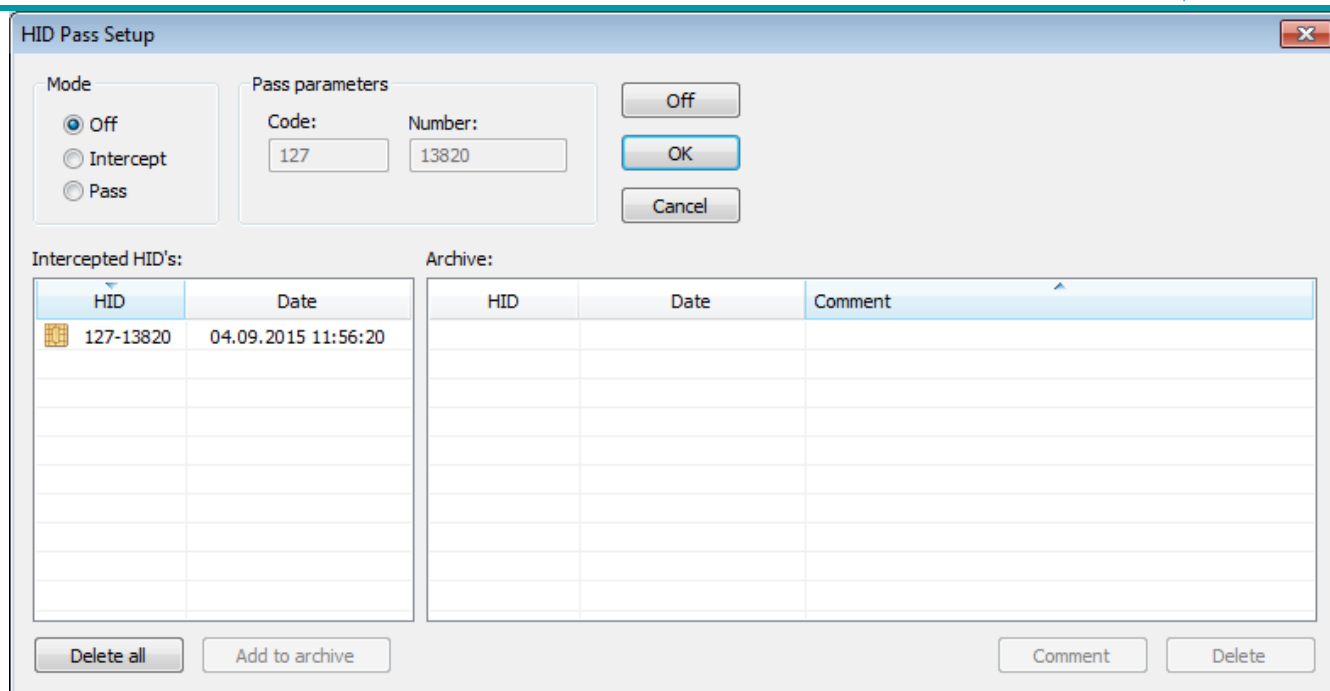


Figure 25: HID Pass Setup dialog.

The **Intercepted HID's** table lists all captured HID cards of all connected devices including HID card data and capturing date and time.

The recorder can keep in memory up to 100 intercepted HID cards at once.

To save the intercepted data, select necessary lines and click **Add to archive**. The saved data will be shown in the **Archive** table (Figure 26).

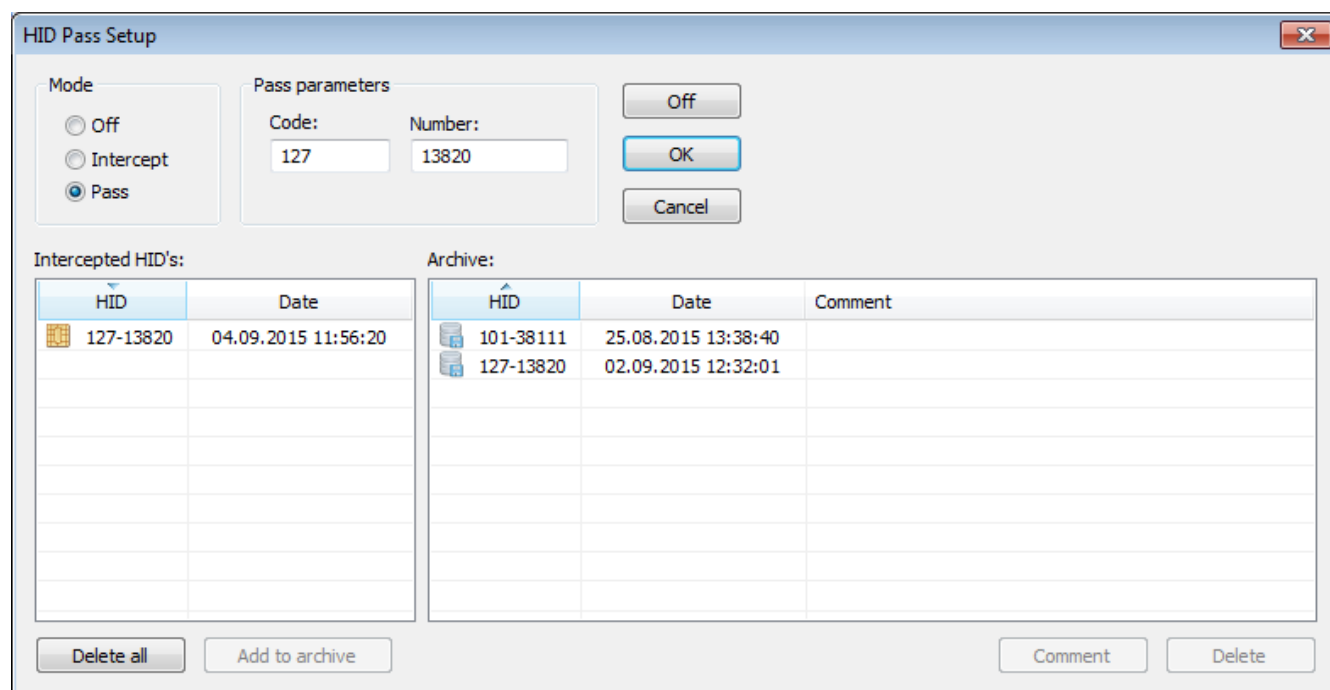


Figure 26: Adding the intercepted data to the archive.

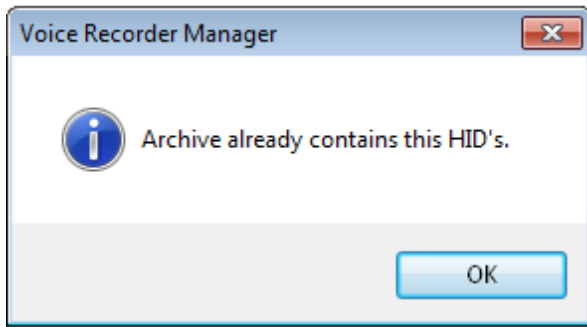


Figure 27: The data is already copied.

If you try to add the already saved data, an info message will show up (Figure 27).

Saved files are marked with the  icon.

In order to add a comment for the selected HID's, click the **Comment** button.

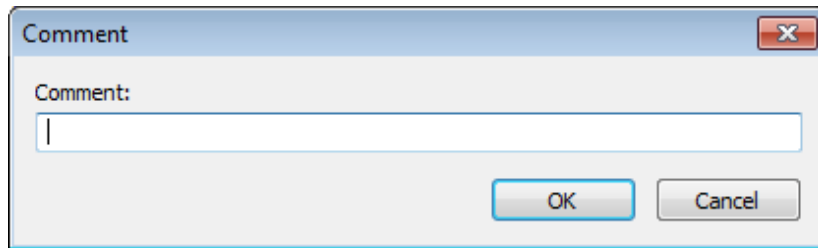


Figure 28: The comment dialog.

Specify text in the opened dialog (Figure 28) and click **OK**.

To change the previously added text, select the **desired** line, click the **Comment** button and edit text of the comment.

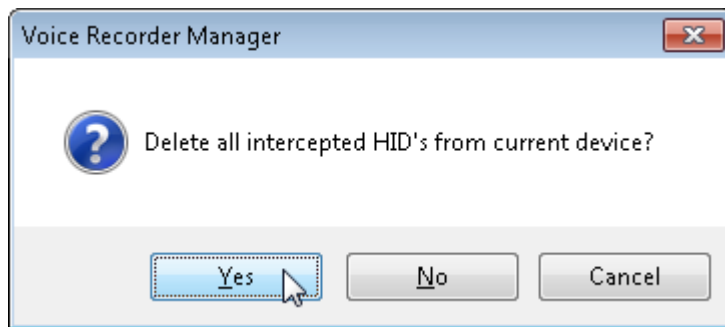


Figure 29: Confirming data deletion from the device.

In order to delete all information on captured data, click **Delete**. Then confirm deletion in the dialog shown in Figure 29.

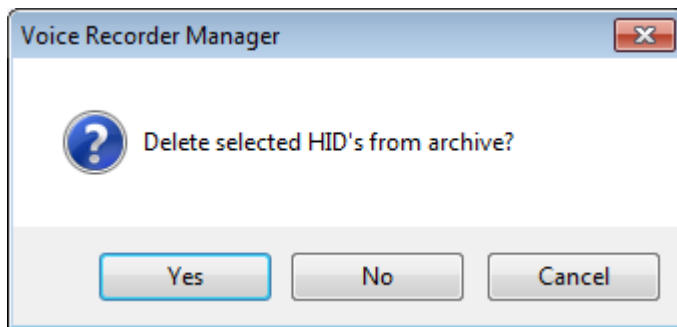


Figure 30: Confirming data deletion from the archive.

In order to delete the selected HID's from the archive, select the desired line and click **Delete**. Then confirm deletion in the dialog shown in Figure 30.

8.3.6.12 Recording Button ON/OFF

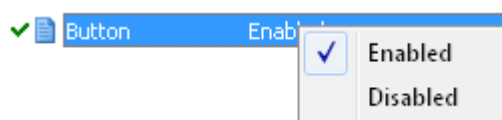


Figure 31: The Button shortcut menu.

Shortcut menu of the **Button** option (Figure 31) is used for enabling/disabling the button-triggered recording mode.

8.3.7 The Recordings Tab

8.3.7.1 Recording Playback

The **Recordings** tab shows the list of recorded files stored in the device memory (Figure 32) and their features:

- Recording ordinal number starting from the oldest one;
- Recording date and time;
- Duration;
- File size;
- Sound format;
- Start method (manual/scheduler/VOX);
- Loop mode status.

Recordings		Settings					
Number	Start date	Duration	Size, KB	Sound format	Start method	Loop	
▶ 1	21.08.2015 14:59:02	6:24	95 928	PCM-32, 32 KHz, stereo	manual		
▶ 2	21.08.2015 15:10:00	1:10:03	1 048 072	PCM-32, 32 KHz, stereo	scheduler		
▶ 3	21.08.2015 16:23:44	0:00	234	PCM-32, 32 KHz, stereo	manual		
▶ 4	21.08.2015 16:24:12	0:03	994	PCM-32, 32 KHz, stereo	manual		
▶ 5	21.08.2015 16:28:59	0:01	342	PCM-32, 32 KHz, stereo	manual		
▶ 6	21.08.2015 16:29:20	0:13	3 330	PCM-32, 32 KHz, stereo	manual		
▶ 7	21.08.2015 16:30:57	0:00	100	PCM-32, 32 KHz, stereo	manual		
▶ 8	21.08.2015 16:30:59	0:08	2 212	PCM-32, 32 KHz, stereo	manual		
▶ 9	21.08.2015 16:31:23	0:00	188	PCM-32, 32 KHz, stereo	manual		
▶ 10	21.08.2015 16:38:00	0:06	1 646	PCM-32, 32 KHz, stereo	manual		
▶ 11	01.01.1970 2:43:13	0:06	432	PCM-16, 16 KHz, stereo	manual		
▶ 12	01.01.1970 0:32:03	0:03	238	PCM-16, 16 KHz, stereo	manual		
▶ 13	01.01.1970 0:38:20	0:12	758	PCM-16, 16 KHz, stereo	manual		
▶ 14	01.01.1970 0:48:13	0:02	134	PCM-16, 16 KHz, stereo	manual		
▶ 15	01.01.1970 0:58:05	0:02	140	PCM-16, 16 KHz, stereo	manual		
▶ 16	01.01.1970 0:52:48	0:02	134	PCM-16, 16 KHz, stereo	manual		
▶ 17	01.01.1970 0:02:23	0:02	142	PCM-16, 16 KHz, stereo	manual		
▶ 18	25.08.2015 14:00:00	20:01	74 916	PCM-16, 16 KHz, stereo	scheduler		
▶ 19	25.08.2015 14:46:00	39:44	148 602	PCM-16, 16 KHz, stereo	scheduler		
▶ 20	25.08.2015 15:27:00	3:29	13 050	PCM-16, 16 KHz, stereo	scheduler		


Recording duration (h:mm:ss): for free memory 3:05:10, for total memory 9:19:14

01.01.1970 1:51:2








Figure 32: The list of audio files.

When selecting one or multiple recordings, the status bar displays the total number of recordings, number of selected audio files and their total size.

To play back a recording, select it from the list and use one of the following methods:

- Select **Play** from the **Recordings** main menu or shortcut menu of the file;
- Double-click audio file with the left button;
- Press **Enter**;
- Click the  button on the playback control panel.

You can also use slider and playback control buttons:

	Play / Pause		AGC
	Stop		Noise suppression
	Next recording		Equalizer
	Previous recording		

The playback slider which is displayed under the list of audio files shows the current playback position, and the information bar below this slider shows the audio file duration from its beginning till the current position and its full duration.

The volume slider controls the volume of audio files.

To configure sound processing filter settings, click . In the opened dialog (Figure 33), configure necessary settings.

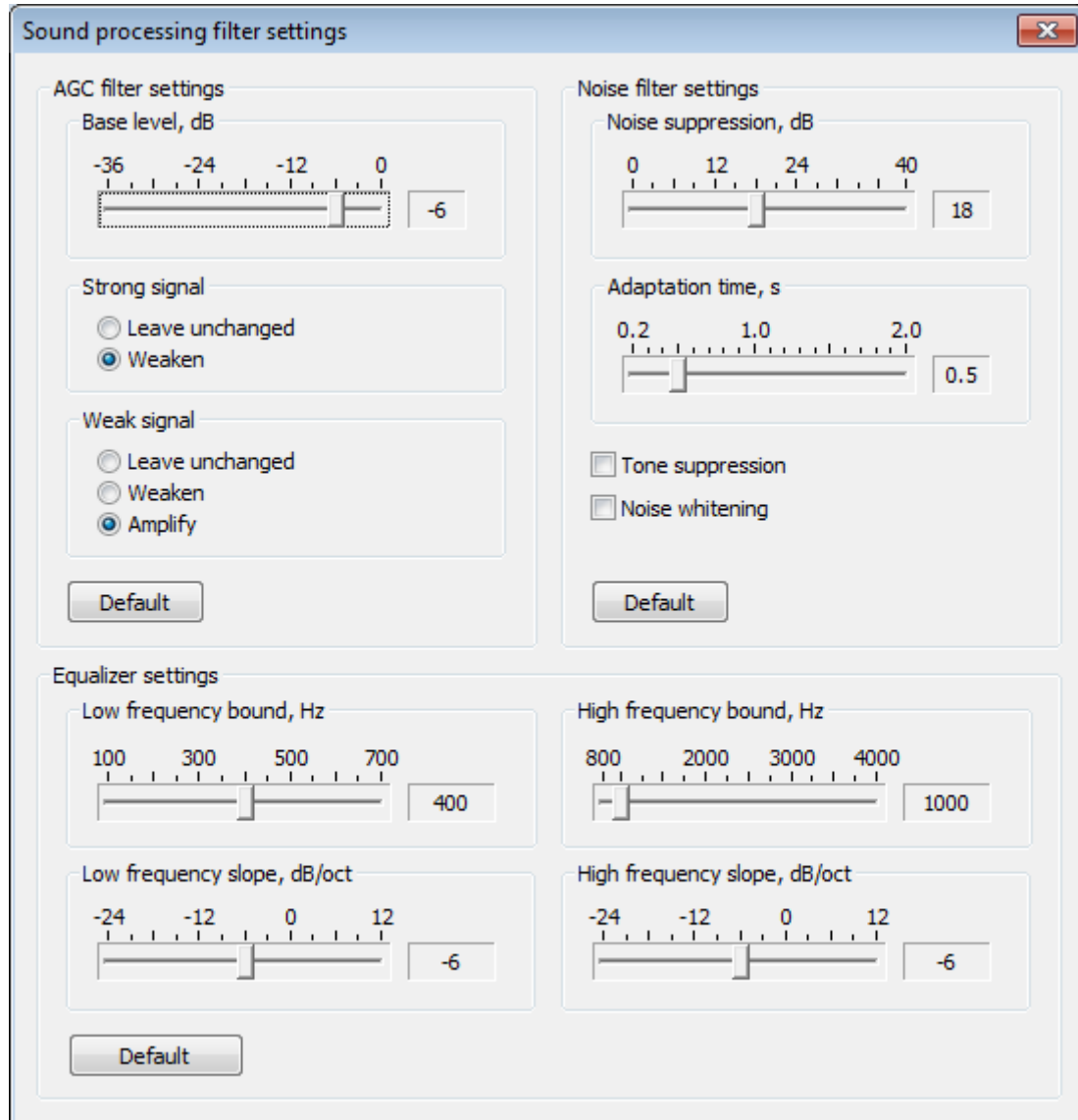


Figure 33: Sound processing filter settings dialog.

8.3.7.2 AGC Filter Settings

The AGC filter is used for manual adjustment of a signal level (raising the volume for weak signals and reducing it for strong signals). It is used for signals with significant difference in levels. For example, when two speakers are on a different distance from a microphone or when the recording was made through a telephone channel.

Define settings for base level and strong or weak signals.

Base level – all signals over this level are considered loud.

Strong signal – signals with standard deviation exceeding the base level.

Weak signal – signals with standard deviation below the base level.

The **Default** button applies default filter settings.

8.3.7.3 Noise Filter Settings

Noise filter is used for voice extraction from stationary broadband noise (with no significant level or spectrum changes), for the middle spectral conditioning and bringing it to the specified (flat or speech) spectrum. The result of this processing enables saving speech signals, attenuating noise and conditioning signal spectral.

Using the **Noise suppression** (dB) slider you can set noise suppression rate from 0 dB (disable noise suppression) to 40 dB.

Using the **Adaptation time (s)** slider you can set the time during which the noise reduction parameters to be applied to a recording.

Ticking the **Tone suppression** checkbox enables the tone suppression mode, which is an additional option in the noise suppression filter. Sometimes adjusting noise suppression filter parameters is not enough to eliminate strong tone distortions, the **Tone suppression** filter is perfect for. It is recommended to use this filter all the time.

Ticking the **Noise whitening** enables additional filter option for the noise suppression. This option suppresses noise on those frequencies, where distortions are more intense, making a signal more comfortable for perception.

The **Default** button applies default filter settings.

8.3.7.4 Equalizer Settings

Equalizer is used for amplification and attenuation of spectral components in the low and high frequency region.

Equalizer settings are as follows:

Low frequency bound (Hz) – low frequency of a flat filter response.

High frequency bound (Hz) – high frequency of a flat filter response.

Low frequency slope (dB/oct.) – slope steepness of the frequency response filter below the flat region.

High frequency slope (dB/oct.) – slope steepness of the frequency response filter above the flat region.

The **Default** button applies default equalizer settings.

8.3.7.5 Copying Files to PC

Copying files that are not protected with a PIN can be performed with the OS native tools.

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

To export files from recorder storage to PC hard disk, select the files from the list and go to **Recordings > Export** (use either main menu or shortcut menu). A dialog will show up (Figure 34).

In the opened dialog specify folder you want to copy files to and some additional options:

- Remove the DC component;
- Bring the sampling rate to standard;
- Create a digital signature.

DC component - is an average signal value. It does not affect the sound quality but limits the dynamic range at signal amplification, produces undesirable clicks when playback starts and stops. It all overloads the playback equipment. The signal without the DC component can be amplified (without clipping) to a greater magnitude than the signal with the DC component.

The sampling rates that are used for recording signals slightly differ from the standard rates (for example instead of 16 kHz sampling rate 15 957 Hz sampling rate is used).

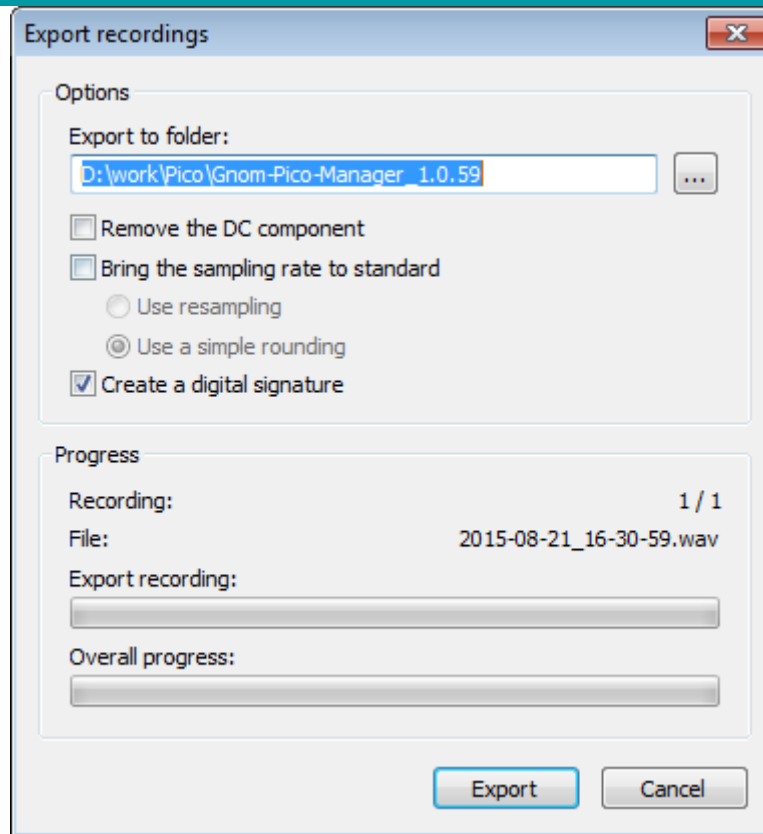


Figure 34: Export recordings dialog.

Some applications do not support recordings with nonconventional sampling rates and in this case you will need to bring the sampling rate to a standard one (8, 16, 32 kHz).

In order to bring the sampling rate to a standard one, you may use either resampling or a simple rounding.



When bringing the sampling rate to a standard one, you should consider the following information:

- oversampling modifies original recording, which is unacceptable in some kind of situations;
- simple rounding may lead to an incorrect recording metainformation and in long-lasting audio files (more than hour) the real recording duration may differ from the one specified in metainformation.

Once you click **Export**, the application starts copying files to the specified folder. The indicators display the export progress. The top indicator shows the current file export progress. The lower indicator shows the export progress of all selected files.

8.3.7.6 Deleting Recordings

If you want to delete all recordings from the device memory, go to **Recordings** main menu option > **Delete all**.

Deletion may take a few moments.



Once deleted from the device internal memory, the data cannot be recovered in any way.

8.3.8 Digital Signature Verification

The digital signature verification 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, you can verify its authenticity by analyzing this recording and digital signature file.

To perform verification with **Voice Recorder Manager**, select from the main menu **Digital sign** → **Authenticate**.

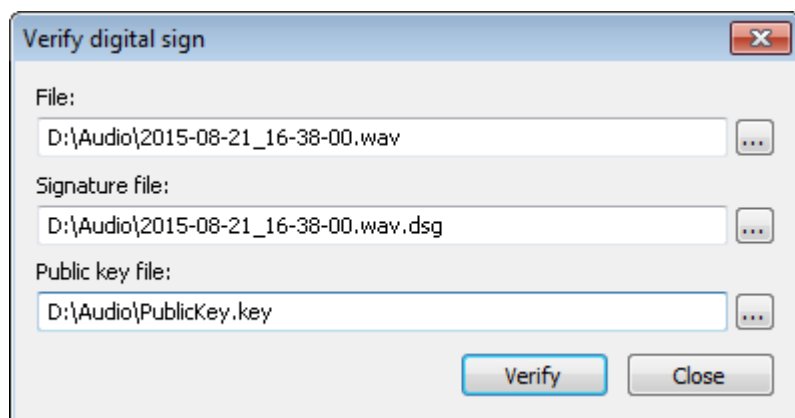


Figure 35: Verify digital sign dialog.

In the **Verify digital sign** dialog (Figure 35), specify access path to the file, its digital signature and public key files and click **Verify**.

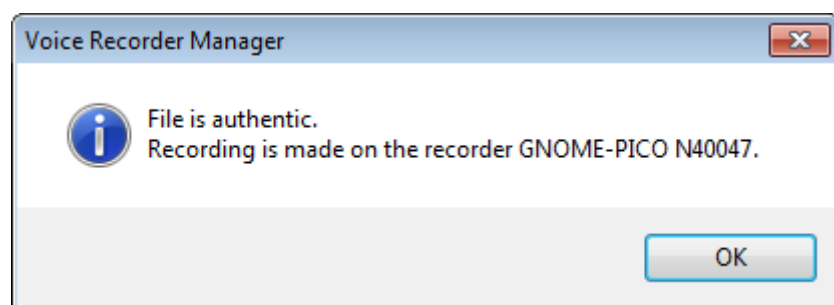


Figure 36: Verification result of unchanged audio file.

If a file has not been modified, the following message will appear: **File is authentic. Recording is made on the recorder GNOME-PICO №NNNNNN**, where **NNNNNN** stands for the device serial number (Figure 36).



Figure 37: Verification result of changed audio file.

If a file has been modified, you will see the following message: **File is not authentic** (Figure 37).

To perform verification with other software tools, you need a public key file. To get it, select from the main menu **Digital sign** → **Export public key**.

In the opened dialog, specify folder you want to save file to.

The default public key name is **PublicKey**. You can change file name.

8.3.9 Firmware Update

If you want to update firmware of your Gnome-Pico please contact STC technical support.

We will send you a file with your new firmware. Save this file on your PC.

Gnome-Pico firmware file has the **EFM32_Pico_X.X.XXX.bin** name, where **X.X.XXX** stands for firmware version. For example, **EFM32_Pico_2.3.77.bin**.



You must carry out firmware update on the same PC where you have installed **Gnome-Pico** drivers.

Run **Voice Recorder Manager** and connect the device you want to update to PC via docking station.

Go to **Device > Update firmware**.

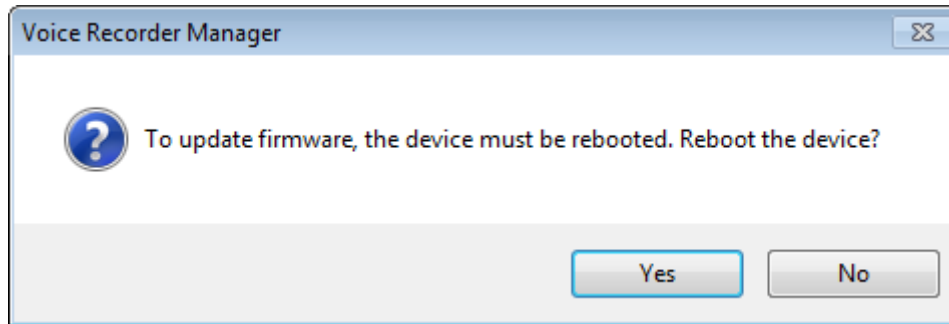


Figure 38: Confirmation dialog.

Confirm your action and reboot the device (Figure 38).

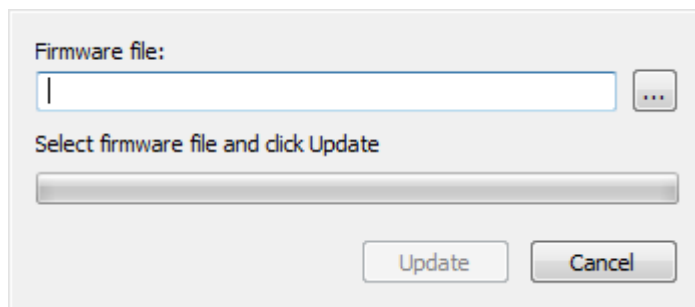



Figure 39: Selecting a firmware file.

In the dialog, click , specify **EFM32_Pico_X.X.XXX.bin** file path and click **Update** (Figure 39).

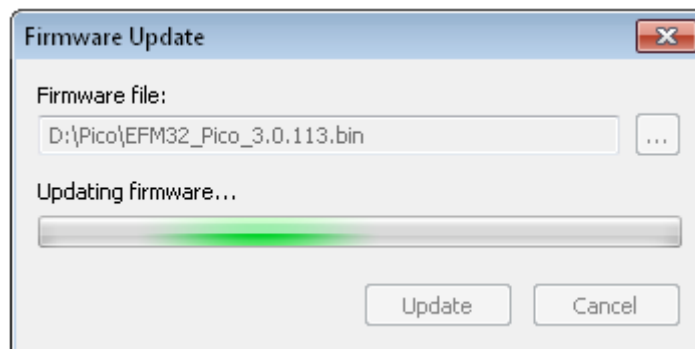


Figure 40: Updating device firmware.

Wait until the application completes update. Once update is over, all device **Settings** will change to default ones. They will be displayed in **Voice Recorder Manager**.

8.3.10 About the Application

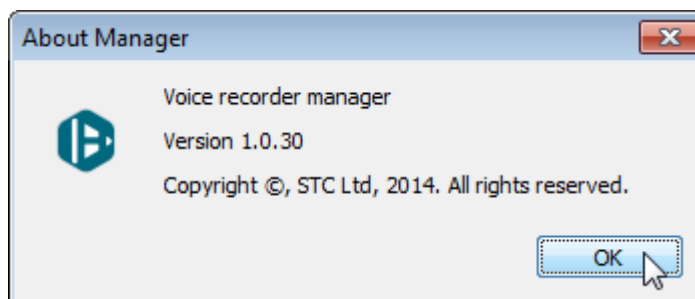


Figure 41: About Manager.

To view the **Voice Recorder Manager** information, select from the main menu **Help > About Manager**.

To close this **dialog** (Figure 41), click **OK**.

8.3.11 Exiting the Application

To exit the application, click **Exit**  located in the main screen. You can also close it by pressing **Alt+F4** while in the main screen.

9 KNOWN ISSUES AND TROUBLESHOOTING

While installing the driver or updating your firmware, some error messages may show up: "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:

- While installing the driver, 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.

If you face any of the mentioned errors, first of all make sure the driver you have installed is compatible with your Windows version.

If the wrong driver has been installed, you need to reinstall the driver (make sure to 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.

10 MANUFACTURER WARRANTY

10.1 The product service life amounts to at least 2 years (without regard to battery service life).

10.2 The Manufacturer guarantees product quality and security within the warranty period.

In case of any non-compliance with the product operation requirements specified in Section 3 of this OM discovered within the warranty period, except those non-compliances caused by product normal operation, the Manufacturer shall replace the defective product with a new copy on the Customer's first request within 30 days.

10.3 Product warranty period equals 12 months, starting the day the Consignee files the Certificate of Acceptance.

The guarantee of the quality of the product does not extend to the battery.

10.4 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.

Product return operation, sending the product to warranty maintenance facility, product recovery or replacement operations are all performed at the expense of the Manufacturer.

10.5 In case product performance restoration where located is unavailable, the Manufacturer provides the Consignee (the Customer) with a working copy of the failed product upon Customer's request, for the period of failed product recovery (repair) which is due to be complete in 30 days.

In case of product failure for the reasons that are in no way related to product misuse within the warranty period, and provided the product recovery is impossible, the Manufacturer shall supply a new working copy of the product in the shortest time possible. The warranty period for the new supplied copy starts from the moment it replaces the failed copy of the product.

In case of any defects and/or inconsistencies discovered within the warranty period, please send a complaint letter to either of the following addresses:

STC Ltd, P.O. Box 124, Saint Petersburg, 196084, Russia

Tagansky Business Center, Offices 2.3.7, 2.3.8, Ulitsa Marksistskaya 3 Str. 5, Moscow, 109147, Russia

Inquiries:

+7 (812) 325-88-48 (Saint Petersburg)

+7 (495) 669-74-40 (Moscow)

Email: support@speechpro.com

gnome@speechpro.com

11 CERTIFICATE OF ACCEPTANCE

Product title: Gnome-Pico 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.

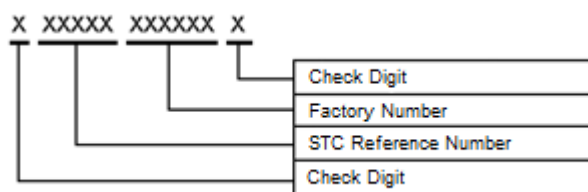
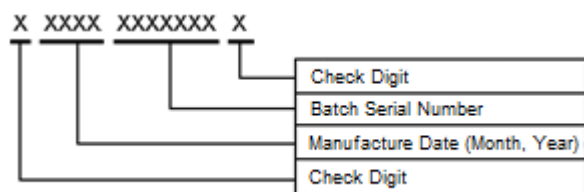
Stamp Here

Signature *Print Full Name* *Date (dd/mm/yyyy)*

Shipping Date

Day, Month, Year *Signature* *Print Full Name*

Batch Number and Device Number Breakdown:



008-130117

