

Edic-mini Tyny16

Digital Voice Recorder

Operation manual

Version: 08-09-26

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Edic-mini Tiny16

Digital Voice Recorder

The recorders of the Edic-Mini Tiny 16 family are intended for the professional recording of speech onto a built-in Flash memory card. Then the recordings can be uploaded to the computer.

Characteristics

- Extremely small size and weight;
- Long recording duration: from 18 to 60 hours depending on the model (8 kHz sampling rate, compression algorithm ADPCM 2 bits);
- Very low current consumption;
- Wide bandwidth;
- Wide dynamic range;
- Built-in clock and calendar;
- Timed recording;
- No moving parts;
- Wide operating temperature range;
- Stable work in unstable environment (dustiness, shakiness).

Overlook

Connect the recorder to a USB computer port using the supplied USB cable. The supplied software is available for Windows 2000/XP. The software allows to save recordings as standard audio files, program the recorder's settings, use the recorder as a Flash drive for saving and uploading files with sizes from 128 Mb to 4 Gb depending on the model.

You can renew the recorder's firmware using the USB interface.

The recorder has a Voice Activation System (VAS) that allows compressing pauses in audio recordings, increasing real recordings' duration. While using VAS, the recorder's program saves memory space, but the time intervals stay the same. Depending on previous setting, after you uploaded the recordings to a computer, the program can restore the pauses as a silence or skip them.

On the recorder's case, the recorder has a LED that indicates operating modes.

You can use the recorder as a Flash drive to save and exchange any data. It is possible to use the recorder as a Flash drive and as an audio recorder simultaneously.

You can set the timer setting in the recorder program: for daily timer (set the time for the beginning and end of the recording) and for once timer (set the date and the time for the beginning and the end of the recording).

You can set a password protection in the recorder so unauthorized users will not have access to recorder's settings and recordings.

Every recording has a digital watermark along with the date and the time of the beginning of the recording. The digital watermark saves the data about the recording – unique serial number of the used recorder and what changes were made to it.

The recorder's program has a Multilanguage support system.

Depending on the modification, the recorders can differ by:

- Control (button or switch);
- Memory capacity;
- Case design.

Main Technical Characteristics

Table 1.

Characteristic	Value
Ratio signal/noise (dB)	-80
Mode	mono
Compression algorithm	1. Without compression 2. U-Law 3. ADPCM (2 and 4 bits)
Sampling rate	5.0 6.6 10 13.3 20
Frequency band (Hz)	100 – 10,000
PC interface	USB 1.1
Data communication rate	Up to 5.5 Mb
ADC digit capacity	16 bits

Recording Duration Depending on the Model

The recording duration depends on the recorder's model. Table 2 shows the data that are in the conditions: the Mono mode, sampling rate is 8 kHz, and ADPCM (2 bits) compression algorithm.

Table 2.

Model index	Recording duration		Built-in Flash memory capacity
	In minutes	In hours	
1120	1,120	18,6	128 Mb
2240	2,240	37,3	256 Mb
4480	4,480	74,6	512 Mb
8960	8,960	149,3	1 Gb
17920	17,920	298,6	2 Gb
35840	35,840	597,3	4 Gb

Recording Duration Depending on Compression

The recording duration depends on compression. To detect the recording duration that can fit on your recorder's memory card, check the data shown in Table 3. Evaluate the duration by dividing the recorder's model index by a correspondent coefficient from the table.

Example: for 1120 model, the recording duration is $1120/5 = 224$ minutes (without compression, mono, sampling rate is 8 kHz).

Varying the different recorder's settings, you can optimize the relation between the recording quality and the demanded duration. Take into account that the sampling rate defines a frequency band and the compression method defines the memory consumption while recording.

You can get the best recording quality (along with the biggest memory consumption) in a mode without compression. Then, as the recording quality regresses (and the memory consumption diminishes), the next modes are: logarithmic (u-Law), 4-bit ADPCM, and 2-bit ADPCM. Pay attention that the modes with high sampling rate increase the recorder's consumption current and thus decrease the rechargeable battery life.

Table 3.

Compression method		Sampling rate, kHz					
		5	6.6	8	10	13.3	20
Without compression	Coefficient	5	6.6	8	10	13.3	20
	Recording density Kbit/ sec	80	105	128	160	213	320
Log (μ LAW)	Coefficient	2.5	3.3	4	5	6.8	10
	Recording density Kbit/ sec	40	52	64	80	108	160
ADPCM (4 bits)	Coefficient	1.25	1.6	2	2.5	3.4	5
	Recording density Kbit/ sec	20	26	32	40	54	80
ADPCM (2 bits)	Coefficient	0.6	0.8	1	1.25	1.7	2.5
	Recording density Kbit/ sec	10	13	16	20	27	40

Working with the Recorder

Before recording, turn on the recorder. For different models, there are different ways to turn on the recorder. You can find a full description of how to turn on the recorder in the recorder instruction's supplements.

After you turn on the recorder, start (turn on) recording. Methods of starting recording are different for different models. You can find the full description in the recorder's instruction supplements.

After you start recording, the recorder flashes 5 times and then starts recording. While recording, the recorder's LED indicates the recorder's operating modes by two successions.

If you turn on recording by a button, recording will start when you release the button. The indication happens in the following order: the first flash succession, a pause for 2...4 seconds, the second succession, and then a pause for 7... 10 seconds.

The first succession corresponds to the battery charge at the moment when recording begins (for models with the power supply from a battery) or a current rechargeable battery charge (for models

with a power supply from a rechargeable battery).
1 flash means that the charge is close to maximum,
2 flashes – the charge is enough for work, 3 flashes
– you need to change the battery or charge the
rechargeable battery.

The second succession corresponds to the amount of the recorder free Flash memory space. 4 flashes mean 0...25% memory is free, 3 flashes – 25-50%, 2 flashes -50-75%, 1 flash – 75-100% is free.

When you recorded all you need, stop recording. When you stop recording, the recorder LED flashes once, but this flash duration can last for some seconds depending on recorder's memory capacity.

After you stop recording, the recorder is in a stand-by mode. In this mode, the recorder power consumption is very low so the recorder can remain without charging (or changing the battery) for a long period of time (depending on the recorder model).

If while recording the free memory space ends or the battery (rechargeable battery) is discharged, the recorder stops automatically and switches into stand-by mode.

Microphone Amplifier Settings

In the recorder, you can set the microphone amplifier settings. You can set a fixed or automatic gain control (AGC). AGC changes the signal amplification automatically depending on the signal level. So you can record a very loud audio signal (nearby an audio source) in its true value. Also, you can amplify a weak signal (a distant source). You can vary AGC settings to make recording fit your need.

Change AGC settings using the RecManager for EdicTiny16 program.

Playing Back the Recordings

You can play your recordings back on a PC using any program of audio playback (for instance, Windows Media Player). For this, upload the recordings to the computer using the RecManager for Edic Tiny16 program.

Recording Methods

You can use the recorder varying its operating modes. In addition to described above possibilities to turn on recording by the different controls, you can use the VAS mode, use timers' settings, and circular recording.

Voice Activating System (VAS)

Voice Activating System allows to reduce (up to 100 times) the memory and power consumption.

When you turn on the Voice Activating System, the recorder checks the level of the audio signal. If the signal is above the threshold (you can change the threshold in the recorder's settings), the recorder saves the audio signal. Every time when the signal becomes below the threshold (silence), recording will stop, but the duration of this pause will be saved. Recording will start again when the signal is above the threshold.

The LED indication is the same as in other modes (two successions) when the audio signal is above threshold. When the signal is below threshold, the LED has a weak luminescence.

When you upload the recording to a PC, you can decide what to do with the pauses: to save them in the file or delete. If you save the pauses, the audio recording duration will be equal to the audio signal's duration. If you do not save the pauses, in a file, all the recorded parts will go on one after another without breaks.

Recording by Timer

Recording can start automatically with the help of built-in timers. The recorder has two timers: a once timer and a daily timer.

Use the daily timer when you need to start and finish recording every day at the same time. In the settings, you can set the time for beginning and end of the recording (for instance, 12:50 and 13:20). It means that at 12:20 (12:20 pm) recording starts and at 13:20 (1:20pm) recording stops.

Use the once timer if you need to record something that will start at a certain date and a certain time and will finish, also, at a certain date and time. For this, you need to set these data in the recorder's settings for the once timer (for instance, the beginning is at 23:50 on December, 31, 2007, and the end is at 00:10 on January, 1, 2008).

In both cases, recording will be going on while there is free space on the recorder's memory and the recorder's battery (rechargeable battery) is not discharged.

You can stop recording by timer if you press the recorder button or set the recorder's switch into "REC" position and then to "STOP" position for 2-3 seconds.

Circular Recording

In the Circular Recording mode, you do not need to stop recording because the recorder's memory is filled. In this mode, the newest data are recorded over the oldest ones. So at the moment when you stop recording, your recorder will save the newest data that were recorded just before turning off.

You can select the whole memory volume for circular recording or a part of it. The amount of space appointed for circular recording detects the circular recording duration.

Recorder Settings

Use the RecManager for Edic Tiny16 program to change the recorder's settings. After you installed the program on your computer, run the program. The full program description is on the supplied CD. This program provides settings of:

- Timers
- VAS (Voice Activating System)
- Circular recording
- Quality settings
- Control
- Password
- Synchronization of the date and time with

- a PC
- Microphone amplifying
- Recordings' downloading and uploading

Program Installation

The program and all the instructions are on the supplied CD in the folder \Edic-Mini Tiny16\.

To install the program, run:

RecManTiny16Setup.exe file. Then follow the program directions. After the program finished the installation, the message, suggesting to restart the computer, will appear. Restart the computer. After this, the program is installed and ready for work.

Attention!

- 1. Do not turn the recorder off when the RecManager program is in operation (the recorder LED is flashing). This can lead to the data lost.*
- 2. When the recorder is connected to a PC, recording is impossible.*
- 3. If while recording, you connect the recorder to a PC, recording will stop.*

Connecting to a Computer

Connect the recorder to a computer USB port using the supplied USB cable. While connecting, the recorder LED will flash. If this is the first connection, Windows will suggest to install the device drivers. If the message, suggesting to connect to Windows Update, will appear, refuse. In the dialog window, select Automatic Installation and follow the installation wizard directions.

While installing, this message can appear: "The Installing software was not tested for compatibility with Windows XP". After the driver is installed, the LED will turn off.

Run the RecManager for EdicTiny program. If the program is in demo mode, switch to a standard mode (USB 1.1) in the Recorder menu. The computer will detect the recorder and show the recorder Flash memory content. Make all the operations you need. Then close the program and disconnect the recorder from the computer.

For the full information about the program, read the Instructions for the RecManager Program that is on the supplied CD in the folder \Edic-Mini.

Renewing Firmware

The recorder operates according to the commands from its internal firmware that provides all the recorder's functionalities. Renewing the firmware expands the recorder abilities and increases its reliability.

You can download newer firmware from <http://www.ts-market.com> for free.

To renew the firmware, follow these directions:

1. Download ET16_FW_Updater_x_x.exe file (renewing utility) from the website:

<http://www.ts-market.com>.

x_x is the number of the firmware version.

2. Connect the recorder to a computer.
3. Check that the RecManager program is not active. Otherwise, close it.
4. Run the renewing utility: ET16_FW_Updater_x_x.exe file.
5. Confirm that you want to renew the firmware. After the renewing utility renewed the firmware, the confirmation message will appear.
6. Run the RecManager program.

7. After connecting the computer with the recorder, the RecManager program will show the information about a new firmware in its status line.
8. Format the recorder memory card.

Attention!

Before renewing, upload all useful information from the recorder because the recorder's memory will be formatted.

Multilanguage Support

The RecManager program is available in both Russian and English. However, you can translate the button names, messages, and etc. into other languages. For this, edit RecManager_rus.lng (or RecManager_eng.lng) file in the following way:

1. In the first file line, change the number of the page code into the code of your language.
2. Translate all the messages and names from this file into your language and change them.
3. Rename RecManager_XXX.lng file (XXX- an abbreviation for the language).

After you run the program the next time, your language will be available.

If you want your language to be in the program installation, send the edited file to support@ts-market.com. The installation with your language support will be available on the TS-Market website.

Technical Support

Our engineer constantly work improving the software and documentation. You can always download the last version of the program from our website for free.

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