

EDIC-mini
Led S 51
Digital Recorder

OPERATION MANUAL

Version: November, 2011

© TS-Market

Contents

Overlook	3
Specifications	3
Recorder's Appearance	4
Software	5
Technical Characteristics	7
Operating the Recorder	9
Getting Started.....	9
Clock Indication.....	9
Recording.....	10
Playing back and deleting records	11
Navigation in Playback Mode	11
Deleting Recordings.....	12
Monitoring battery	12
Profile Selection	13
Record Types	14
Voice Activation System	14
Recording by Timer	15
Circular Recording	16
Recorder Setup.....	17
Profile Selection	17
Connecting to the PC	18
Firmware Update	19
Technical Support	19
Address:.....	20

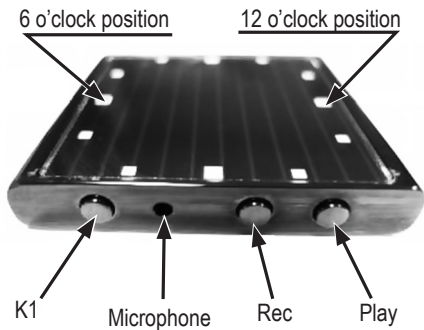
Overlook

Recorders of the Edic-mini Led family are professional devices intended for making high quality record of voice messages into a built-in flash memory. The recordings can be further uploaded onto the PC or played back with headphones.

Specifications

- LED time display;
- Sampling rate while recording up to 40 kHz;
- Record duration 300 and 1200 hours;
- Extremely low current consumption;
- Wide frequency band;
- Wide dynamic range;
- Built-in clock and calendar and the option to start recording at the preset time;
- Due to the absence of removable elements the Recorder is operational under wide temperature ranges when shaking or dusted;
- The option to record while charging and the option to playback recordings with headphones.

Recorder's Appearance



Recorder's Appearance for Edic-Mini-Led-S51

- The Recorder has 3 control buttons:
 - the K1 button to turn on/off LED time display;
- Time is indicated with the help of two LEDs;
- Position of the red LED is hours;
- Position of the green LED is minutes;
- The accuracy of the time is + 5 minutes;
 - the "Rec" button to start/stop recording;
 - the "Play" button to start/stop playback.

The indication of operation is performed by one green LED and one yellow LED. There is a micro-USB connector to connect the Recorder to the PC and headphones for playback.

Via USB-SPI adapter (included into the delivery set) the Recorder is connected to the USB port of the PC.

Software

The software located on the supplied CD operating under Windows XP, Windows Vista, Windows 7 operating systems enables the user to save recorded messages as sound files in wav format, as well as to program Recorder's parameters, apply it as a flash drive to store and transmit files.

The capacity of the files uploaded depends on marking: 300h – up to 2 Gb, 1200h - up to 8 Gb.

The Recorder is equipped with VAS (Voice Activation System) to compress pauses efficiently in messages therefore enhancing real record duration. When applying this system the pauses save memory, while time intervals are preserved. When uploading records onto the PC the duration of pauses can be restored (in the form of silence) or omitted depending on the settings specified.

The Recorder enables it to perform recording by timer: either daily (with record start and end time specified) or once (date-and-start time and date-and-end time are specified).

To protect the Recorder's information there is the option to set password forbidding access to the Recorder's contents and settings without entering the password. Each record performed by the Recorder has a mark of time and date of start time supplied with "digital signature" to identify the model of the Recorder to have performed the recording and the attempts to modify it. The software of the Recorder provides multilingual support.

Technical Characteristics

Analog-to-digital converter	16 bit
Control	3 buttons
Indication	LEDs
Record Mode	mono
Sampling rate	4000, 8000, 13300, 20000, 40000 Hz (ADPCM up to 8kHz, u-Law – up to 20kHz)
Sound compression types:	without compression, u-Law (2/1), ADPCM 4 bit (4/1), ADPCM 2 bit(8/1)
Signal-to-noise ratio of built-in microphone	60±2 dB
Signal-to-noise of ADC audio codec	up to 80 dB
Voice Activation System (VAS)	
Circular recording mode	
Built-in real time clock	
Recording by Timer	once and daily
Record Profiles	8 adjustable profiles

Battery level monitoring	
Interface with the PC	HiSpeed USB-SPI adapter
Maximum exchange rate from flash memory	7700 kbs
Maximum exchange rate into flash memory	2800 kbs
Rechargeable battery capacity	120 mAh
The option to charge from solar element	
Charging time	no more than 3 hours
Battery life in Standby Mode (under 20°C)	9 months
Battery life (record mode: without compression, 8000 Hz)	30 hours
Battery life in record mode with VAS (without signal)	60 hours
Dimensions (case without band)	42x32x7 mm
Operating temperature range (in Sleep Mode while charging from solar element)	0+65°C

Operating the Recorder

Getting Started

Before starting make sure the rechargeable battery is charged. When necessary charge the rechargeable battery by connecting HiSpeed USB-SPI adapter to the USB port of the PC, and then to the Recorder. Full charging takes 2,5 hours. While charging yellow LED is in the 12 o'clock position flashing with the interval of 1 second.

Clock Indication

Time is indicated with the help of two LEDs.

Position of the red LED is hours.

Position of the green LED is minutes.

The accuracy of the time is + 5 minutes

To start Clock mode press the K1 button – two LEDs (red and green) start flashing. After several seconds the LEDs go off.

To start/stop constant Clock mode keep “Rec” and “Play” buttons pressed in Standby Mode for more than 4 seconds while time indication is active.

If constant Clock mode is on the clock will be indicated until one of the following occurs:

- rechargeable battery is discharged up to 50%;
- constant Clock mode is off;
- the Recorder is charging;
- the Recorder quits Standby Mode.

Recording

The Recorder is in Standby Mode. Press the Rec button twice. After a short flash of the blue-and-yellow LED (the 12 o'clock position) recording starts. Green LED will be flashing with the interval of 3 seconds indicating free memory capacity (1 to 12 scale). The closer LED is to 12 o'clock the bigger free memory size and vice versa. Red LED will be flashing with the interval of 3 seconds indicating battery charge level (1 to 12 scale). The closer LED to the 12 o'clock position the more full the rechargeable battery and vice versa. Recording continues until the Recorder switches to Standby Mode by double pressing on the Rec button. To pause press the Rec button – recording will stop. To resume press the Rec button – recording will continue.

Attention!

If while recording the Recorder's memory is full or the rechargeable battery is discharged the Recorder switches automatically to Standby Mode. Record Mode will not work until there is free memory or the battery is charged.

Playing back and deleting records

Connect headphones to micro-USB connector. The Recorder is in Standby Mode. Press the Play button twice – after a short blue-and-yellow flash (the 12 o'clock position) the Recorder starts playing back the last record and the green LED (the 1 o'clock position) will be flashing with the interval of 3 seconds. To fast forward within the current record keep the Rec button pressed; to rewind within the current record keep the Play button pressed. To stop playing back press the Rec and Play buttons simultaneously.

Navigation in Playback Mode

To go to the end of the current record	press the Rec button
To go to the start of the current record	press the Play button
To go to the start of the next record	press the Rec button twice
To go to the start of the previous record	press the Play button twice
To go to the start of the last record	press the Rec button three times
To go to the start of the first record	press the Rec button three times

Deleting Recordings

The recorded message can be deleted during playback. Press the Play button twice to start Playback Mode. The Recorder starts playing back the last recording (green LED is flashing). Using navigation (see Table) go to the desired record. Keep the Rec and Play buttons pressed until the blue LED starts flashing in the 12 o'clock position. After a second press the Play button – the recording is being deleted and blue LED is on. When the recording is deleted blue LED goes off and the Recorder switches to Standby Mode.

Monitoring battery charge level and free memory capacity

The Recorder provides the option to monitor battery charge level and free memory capacity.

In Standby Mode press the Rec and Play buttons simultaneously until yellow-and-blue LED (the 12 o'clock position) is on. Then it goes off. Green LED indicates free memory capacity: the closer LED is to 12 o'clock the bigger free memory size (1 to 12 scale). If the green LED is in one o'clock position, there is minimum free memory.

Red LED indicates battery charge level: the closer LED to the 12 o'clock position the more full the rechargeable battery (1 to 12 scale). If the red LED is in the one o'clock position, the rechargeable battery needs immediate charging.

Profile Selection

In Standby Mode press the Rec and Play buttons simultaneously until the yellow-and-blue LED (the 12 o'clock position) is on. Then it goes off. Green LED starts flashing in the position from one to eight o'clock position depending on the profile's number. The number of the profile can be modified by pressing the Play button.

Record Types

Voice Activation System

Voice Activation System (VAS) can significantly (up to 100 times) reduce both memory consumption and energy consumption from the power source.

The principle of VAS is as follows: after the user starts recording, the Recorder starts tracing signal from the microphone.

If the signal is less than the one specified in settings (VAS level), it is not the sound from a microphone that is stored in memory, but only the time value during which the threshold is not exceeded (the duration of silence).

When signal level exceeds the preset threshold recording of sound into memory starts. When the signal from the microphone is less than the preset threshold, after some time (which is set at VAS time setting) the Recorder stops recording sound into memory and only saves silence duration. That continues until recording stops.

Indication while standby recording from VAS: LED is not on.

When uploading record onto the PC, you can specify the operations with pauses (silence):

store them in the file uploaded or not. If you save pauses, the duration of the resulting record will correspond to the time during which the recording was performed, and the moments when the signal was below threshold will be played back silent. The duration of silence corresponds to the time when the signal was below the configured threshold. If the pauses are not saved, then the resulting record will consist of written parts (when the signal exceeds the threshold) without counting pauses. These parts will be played one after another without interruption.

You can copy and listen to some voice parts in the records using VAS.

Recording by Timer

Recording can start automatically, without user's control. This is possible when using the built-in timers. The Recorder has two timers: daily, once.

When using timers forced starting the Recorder is not necessary.

When using Daily Timer the Recorder records every day starting and ending at times specified during setup. For example, the recording starts at 12:50 and ends at 13:20.

If you use Once Timer, only one record will be performed, which will start and end at the specified date and record's start and end time. For example, December 31, 2011 at 23:50 recording starts, and January 3, 2012 at 00:10 ends.

Recording will be carried out as long as the Recorder has free memory and its battery charge is enough to perform the operation.

Recording by timer can be stopped by pressing Rec twice.

Circular Recording

The Recorder has the option of circular recording. This method enables it not to stop recording when the Recorder runs out of memory. After there is no more free memory the Recorder begins to record new data over old ones. Thus, the memory will always contain the most recent records that are no longer written off at the time of writing.

The user can devote to circular recording the whole or only a part of the Recorder's memory. The volume of the memory specified determines the duration of the resulting circular record.

Recorder Setup

Profile Selection

Profile Selection is available through the RecManager software, but one of eight preset profiles is selected directly on the Recorder.

Profile record consists of the following characteristics:

Coder type – type of compression

- No compress;
- uLaw;
- ADPCM 2bit;
- ADPCM 4bit.

Frequency – sampling rate

You can choose one of these values:

- No compress – 4, 8, 13.3, 20, 40 kHz;
- ADPCM – 4 and 8 kHz;
- u-Law – 4; 8; 13,3; 20 kHz.

Cycle – circular type of record.

When choosing circular recording, you can set the buffer size in percentage of the Recorder's total memory.

Timer

You can select the type of timer (Daily, Once)

VAS - Voice Activation System

When turning VAS on you can set threshold above which the recording starts from 0 to -60 dB.

And the time during which (after the recording level is below the threshold of record) recording continues - from 0 to 255 seconds

Gain - amplification

from -1 to 40 dB with steps of 0,5 dB

AGC - Automatic Gain Control

When you select the AGC four parameters characterizing the work of AGC can be set

- ft attack (fast attack speed AGC) -
- ft release (Rapid release AGC) -
- sl attack (slow attack speed AGC) -
- sl release (slow release rate of AGC) -

For all of the four options the following values to be set are available: 2.44, 4.88, 9.77, 19.53, 39.1, 78.13, 156.25, 312.5, 625; 1250, 2500; 5000; 10000 20000; 40 000, 80 000 dB / sec.

Connecting to the PC

When connecting to the PC carefully observe the consistency: first connect USB-SPI to USB port, and then connect the adapter to the Recorder. The Recorder switches automatically to charging mode.

Flashing LED states that the charging is in progress.

To connect the Recorder to the PC and to work with the software see Operational Manual for RecManager.

Firmware Update

To update firmware:

- Connect the Recorder to the PC via a USB-SPI adapter as described in Connecting to the PC
- Fully charge the rechargeable battery (until LED stops flashing).
- Press and hold any button on the Recorder.
- Run the firmware update program and follow its instructions (after the corresponding message the button can be released).

Technical Support

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

www.ts-market.com

Address:

TS-Market Ltd.

Building 10/1 Sosnovaya Alleya, Zelenograd,
Moscow, The Russian Federation, 124489

Tel: +7 (495) 638-88-00; +7 (499) 940-95-75

(Cell) +7 (903) 530-10-01, +7 (909)638-88-00

Fax: +7 (499) 735-04-91

E-mail: support@ts-market.com

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