AEQ PAW 120

Professional Digital Portable Recorder

USER'S MANUAL

ED 07/07

Software version 3.14 or higher

V 1.1 – 25/10/2007

CONTENTS

1. GENERAL INFORMATION.

What is PAW120?

AEQ PAW120 is a professional hand-held digital audio recorder. It is smart, easy to use and has extensive features. The PAW120 allows user to record, playback and edit, it supports the MP2, MP3, BWF and WAV formats. The recorder also can connect with a PC via USB interface for audio files uploading or downloading.

◉ **RECORD.**
The PAW120 allows user to pre-define some templates to make a faster selection of technical parameters when a recording is made. Select a template such as "MUSIC" or "SPEECH".

◉ **PLAYBACK.**
Press " ▶■ ⓞ " key to start playing. The user can monitor the audio with either earphones or built-in speaker.

◉ **FILE MANAGEMENT.**
In the file management module it is possible to copy, move and delete files.

◉ **EDIT.**
Cut the unnecessary sections of an audio file and get an storage space release in addition.

◉ **OLED Display.**
The PAW120 recorder has a large bright OLED display. Files can be clearly seen in both bright (sunlight) and darkness conditions.

1.1. FEATURES.

- High quality internal microphone capsule.
- Supports any dynamic, capacitor and electrets external microphone, with Phantom power supply.
- Built-in speaker.
- Built-in waveform audio editor.
- Real-time MPEG and Linear PCM editing.
- OLED dual colour display.
- USB transfer FAT file format compatible with Windows™ and Mac™ OS.
- Automatic Gain Control (AGC) recording.
- Metal case.
- Support BWF (Broadcast Wave File) format, for easy integration into existing automation system.
- Two modes of operation for VOR (Voice Operated Record) system: Pause REC or Split Track.
- Variable voice control trigger level.
- Customized mute time delay.
- Automatic level control.
- Standard Windows FAT16 file system.
- Optional external stereo microphone with direct-contact feature and self-lock system.
- Document management.

1.2. FRONT PANEL KEYS FUNCTIONS.

1 - OK/II **key:**
- Pause function during playback and recording.
- Executes functions in menu mode.
- Selects PRE-RECORD mode from STOP.

2 - C key:
- Cancels (escape) a menu operation or exits a display mode.
- Play/Record mode and MANAGER and SETUP menus access.

3 - REC led:
- Red blinking during recording.

4 - ▲ **Up key:**
- Increases the input gain in prerecord/record mode.
- Skip back to previous file in play/stop mode.
- Moves to the previous available option in menu mode.
- Moves the A or B marker backwards in edition mode.

5 - ◄◄ **Left key:**
- Rewind key during playback.
- Decreases the recording level (0.5dB steps) in prerecord/record mode.
- Move left in the menu mode.
- In edition mode moves the marker backwards.

6 - MENU **Menu key:**
- Display the sub-menu for fast selection of input device, template, etc., in play/record mode.
- Enters markers during recording.
- In edition mode it allows to jump to an exact playback position, return to a previous situation or modify resolution.

7 - ►► **Right key:**
- Fast forward key during playback.
- Increases the recording level (0.5 dB steps) in prerecord/record mode.
- Move right in the menu mode.
- In edition mode moves the marker forwards.

8 - ▼ **Down key:**
- Decreases the input gain in prerecord/record mode.
- Skip forward to next file in play/stop mode.
- Moves to next available option in menu mode.
- Moves the A or B marker forwards in edition mode.

9 - 🗎✂ **Edit key:**
- Fast access to edition mode from MANAGER menu.
- Removes the selected portion between 2 marks during editing.
- Removes the selected files in STOP mode.

10 - ►■⏻ **Play / Stop / Power key:**
- Main Power ON/OFF key (press for 5 secs.). When USB cable is connected, the machine cannot be switched off.
- Toggles between play and stop.

11 - A-B/☀ **A-B key:**
- Selects the position of marker A or B in the edition mode.
- In all other modes, put the display into high brightness for 5 sec.

Fig. 2

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1.3. LEFT SIDE KEYS FUNCTIONS.

Fig. 2

1 - RECORD switch:
- When you slide up the switch the PAW120 starts recording.

2 - AGC (Automatic Gain Control) switch:
- When you slide up the switch Automatic Gain Control is activated.

3 - HOLD switch:
- When you slide up the switch up the keyboard controls are locked.

1.4. RIGHT SIDE.

Fig. 3

1 - USB port:
- Used for connecting to a PC/MAC for file download.
- Allows for external DC powering of the unit.

2 - Output VOLUME adjustment:
- Volume adjustment of headphones & built-in speaker.
- In the sub-menus, allows selection of a character or a number (for names changing).

3 - LINE OUTPUT:
- Stereo line output 3.5 mm Jack connector.

4 - Headphone output:
- Stereo headphone output 3.5 mm Jack connector.

1.5. TOP FACE.

1 - LINE INPUT:
- 3,5 mm stereo Jack connector for line inputs.

2 - EXT MIC:
- 3,5 mm stereo Jack connector for external micro inputs.

3 - MIC:
- Built-in mono microphone.

Fig. 4

1.6. BATTERIES INSTALLATION.

Insert 2 AA batteries into the battery compartment taking care of the correct polarity and close the cover.

Rechargeable batteries (NiCd or Ni-mH) can also be used, but they **can not be charged inside the PAW120** when it is connected via USB to a PC/MAC for external powering.

Fig. 5

1.7. TURNING ON.

Push and hold the " ▶■ ⓪ " key for 5 seconds: the machine turns on and shows the initial screen for 2 seconds followed by the "**STOP**" window display.

To skip the initial screen, press any key. To jump to the "**PRE-RECORD**" window, press the " OK/II " key.

If the AEQ PAW120 recorder is off and you connect it to the computer through the USB cable, the unit will automatically turn on and a sub-window will appear giving the possibility to select "**USB Power**" or "**USB Transfer**". Make a selection and press the " OK/II " key.

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1.8. PLAY / RECORD WINDOW DESCRIPTION.

5 - USB status **6 -** Keylock status

1 - Function Name

2 - Input Level

3 - Recording Level

4 - VOR status

11 - VUmeter

12 – Current status

13 - Files Counters

14 - Total file time / Free record time

7 - Battery status

8 - Boost level

9 - AGC status

10 - Output volume

15 - Play / Record file name

16 - Audio parameters

17 - Play / Record time

18 - Play progress bar
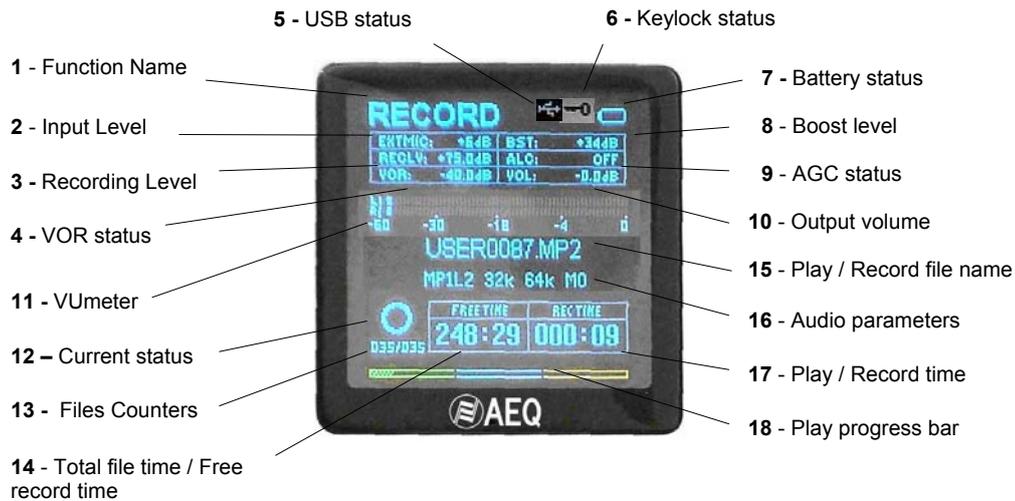
1 - Function Name: Area that indicates the function´s name of the current display ("STOP", "PLAY", "PRE REC" or "RECORD").

2 - Input Level: Indicates the input device (internal/external microphone, line input or a new created device) and the associated input gain.

3 - REC Level: The recording level can be adjusted when record or prerecord function is active using the left and right keys in steps of 0.5 dB. The adjustment range depends on the selected input type: from +84 to +144 dB for "EXT MIC", from -60 to 0 dB for "LINE", from -12 to +20 dB for "LINE HI" and from -35 to -3 dB for "LINE LO". Please note that when internal microphone ("INT MIC") is selected, the "**AGC**" must be turned on as recording level can not be adjusted.

4 - VOR status: Indicates if VOR (Voice Operated Record) mode is turned ON or OFF.

5 - USB status: This icon appears when the machine is connected via USB to a PC/MAC for external powering.

6 - Keylock status: The key icon appears when the keys are locked by means of the "**HOLD**" slide button on the left side.

7 - Battery status: Five stripes inside the battery icon indicates full capacity.

8 - Input Boost level: Only when using an external mic, indicates additional gain, that can be turned off or set to +19dB or +34dB.

9 - AGC status: Indicates if Automatic Gain Control is turned ON or OFF.

10 - Output volume: The output volume level for headphones or internal speaker (play mode) can be adjusted from -40.0 dB to + 1.0 dB in 0.5 dB steps.

11 - VU meter: Full scale from -40 dB to 0 dB with peak hold indicator for left and right channels.

12 - Current status: ■ Stop, **O** Monitoring/pre-record (EE) mode, ● Record, ► Play, ▶Forward, ◀ Rewind and ▐▐ Pause.

13 - File counters: The upper counter indicates the total number of recorded files. The lower counter indicates the number of the file ready to be played.

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14 - Total file time / Free record time: In playback the counter shows the duration of the current file and in recording it shows the remaining capacity left in the memory.

15 - Play/Record file name: The name of the current file during recording or playback.

16 - Audio parameters: This area shows (left to right), the current file type, the sampling frequency, the bit rate and the Mono/Stereo mode.

17 - Play/Record time: Display in minutes & seconds the time since the playback or recording start.

18 - Play progress & free disk space bar (3 colour): During playback the entire bar corresponds to the selected file. The "filled-in" part indicates the playback progression. In stop or record mode, it indicates the remaining record space available in the memory.

2. USING THE PAW120.

Introduction and general information.

The AEQ PAW120 is a hand-held recorder designed for a wide range of applications and functions, which are described in this manual.

The operating concept is designed around a system of preset **templates** where all the required operating settings are stored. The user can choose different parameters of the machine and these personalised settings are stored in a template for future quick access. There are two sets of templates: one for the compression mode to be used and the other one to store different input devices.

The topics covered into this User's Manual are:

- Field audio recording.
- Playing a previous recording.
- Storing settings in a template.
- Editing a recording.
- File / Folder management.
- Downloading to a computer.

2.1. AUDIO RECORDING.

Before making a recording the input source, compression mode, file name and working directory need to be defined. The PAW120 makes recordings according to the pre-selected settings stored in the templates. If nothing is set prior to the first recording then the default settings will be adopted. If specific settings are required, then they must be selected first defining a customized template:

- Input device (internal/external microphone or line input).
- Compression format (Linear PCM, MP2, MP3, a-Law, µ-Law, G729a).
- Working directory (where the recorded files will be stored).

When you select the **input device**, input gain, additional boost, use (or not) of input filter and power (this two parameters just for external micro) are automatically set according to the devices template. Select input device and compression template using the "**MENU**" key according to the pre-saved templates.

When ready, press the "**OK**" key and the PAW120 will go to the "**PRE REC**" mode where the audio input can be heard on the headphones and the levels are shown on the vumeter. In this mode the prerecord buffer (3 seconds) is also active.

In this mode, the recording level can be adjusted in 0.5 dB steps using the "◁" or "▷" keys: the value is shown in the window that appears. Initially, the value corresponds to the preset value stored along in the input device template. When internal microphone ("INT MIC") is selected, the recording level can not be adjusted.

To begin recording, slide the "**RECORD**" switch upwards. The red LED and the display recording symbol will start blinking. The levels are shown and can be adjusted during recording if necessary.

To pause recording press the " OK/II " key. To continue recording, press it again. To enter markers during recording, press the " (MENU) " key.

To stop recording, simply press and hold the " ▶■⓪ " key for 3 seconds.

If the recording is started directly from the "**STOP**" mode, the Pre-record buffer will be off. If during the recording the "**RECORD**" switch is slided upwards again, a new file will be recorded.

Each new recording will be given a file name of up to 8 digits. This file will be stored in the working directory.

See "Renaming a directory" (chapter 5) for details.

Recording using the AGC.

If the AGC switch is in the "**ON**" position then the Automatic Gain Control circuit is active and the manual level controls will no longer operate. The level is controlled automatically to prevent overloads.

2.2. VOICE OPERATED RECORDING.

The VOR allows the system to start a recording depending on the input level. Two parameters must be entered:
- the trigger level to start a recording.
- the recording duration once the input signal falls 25 dB below the trigger level.

IMPORTANT: To start a VOR recording, first start the record manually by shifting up the "RECORD" button.

Once a recording is started using the VOR mode it will stop automatically when one of the following applies:

- The input signal drops 25 dB below the threshold setting for more than x seconds (user defined).
- The internal memory of the machine is full.
- The batteries of the machine are flat.

There are two modes of operation for the VOR system:

- Split Track: each VOR operation will create a new TAKE
- Pause Rec: each VOR operation will be added to the previous, thus creating a continuous TAKE.

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2.3. PLAYBACK.

The AEQ PAW120 can play back files irrespective of the current compression mode selected.

- To **playback** the last recorded file, press "▶■ⓞ " and the machine starts playback immediately.
- To **stop** the playback, press the " ▶■ⓞ " key again.
- To **pause** the playback, use the " OK/Ⅱ " key.

If recording was made with markers, during the playback press shortly the " ▷" key to jump to the next marker position.

To playback another file from the same working directory, use the "△" or " ▽ " keys to scroll through the recorded files available. Once " ▶■ⓞ " is pressed, the selected file will be played immediately.

During a playback of a file, the full play progress bar corresponds to the total length of the file.

When a new file has been selected for playback the "**TOTAL TIME**" counter will indicate its full length and the "**PLAY TIME**" counter starts increasing once the playback begins.

To REWIND during playback, press and hold the " ◁ " key, to go FORWARD press and hold the " ▷ " key.

2.4. PLAYBACK LEVELS ADJUSTMENT.

The output volume level for the headphones and line output can be adjusted by the right side Buttons "**+ VOL –**" in steps of 0.5 dB from -40 dB up to +1 dB. This value is also shown on the display and stored in the memory.

2.5. SETTINGS STORAGE IN A TEMPLATE.

Templates are used to store the custom settings for the AEQ PAW120. These templates contain settings of: input device, levels, filter selection, microphone powering, type of compression, mono or stereo mode, etc.

- Input devices: 10 templates are available and each can store the name and characteristics of different input devices such as microphone capsules or line inputs. The gain setting and powering filters can be selected for each device.
- Compression templates: 10 templates are available and each can be given a dedicated name and can store the desired compression mode, sampling frequency, bit rate and file extension.

Templates configuration is explained on "SETUP MENU" chapter in this manual. Once completed, the desired template can be selected by pressing the "**MENU**" key. Choose the corresponding template by its name in the "**Set compress template**" or "**Set input device**".

2.6. FAST DELETING AN AUDIO RECORDING.

Any audio file can be selected from the "**STOP**" mode by pressing the "△" or " ▽ " keys. Once the corresponding file is shown on the display, press the " 🗑✂ " key and confirm to delete the file.

3. PRESET MENU.

All the settings and parameters of the AEQ PAW120 are made through a selection of MENUs. There are two sets of menus: one is used for the selection of the pre-set choices and the other is used for storing the different settings of the machine.

Press the "**MENU**" key and the menu that allows you to configure the PAW120 will appear.

The "△" or "▽ " keys will highlight the different options and the "**OK**" key confirms the selection.
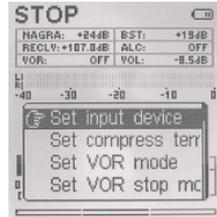
- **Set input device:** Pressing the "**OK**" key allows selection between line input, internal or external microphone or any other predefined template. Each input device can be personalized in the "**SETUP**" menu.

  To change the input device, highlight the desired option and press "**OK**".

  Press "**C**" twice to return to the main window.

- **Set compress template:** Allows the selection of different operating templates, containing all the recording compression settings.

  Select by pressing the " △ " or " ▽ " keys a preset template. Once selected, press the "**OK**" key.

  Each template stores the following parameters:
  - Template name.
  - Compression type.
  - Sampling frequency.
  - Bit rate & Mono/Stereo mode.
  - File extension name.

- **Set VOR mode:** Access to the adjustment of the Voice Operated Recording mode trigger level. This sub-menu permits to set the minimum input level for start recording or to turn off the VOR mode.

- **Set VOR stop mode:** If "**Pause REC**" is selected, the recording will be paused (once the stop delay has passed) if the level drops 25 dB below the trigger level. If the input level rises again above the trigger level, the record on the same file will continue.

If "**Split track**" is selected, the recording will be stopped (once the stop delay has passed) if the level drops 25 dB below the trigger level. If the input level rises again above the trigger level, a new record will start.

- **Set VOR stop delay:** It permits to select the maximum recording lengt before it stops if the input level dropped 25 dB below the trigger level.

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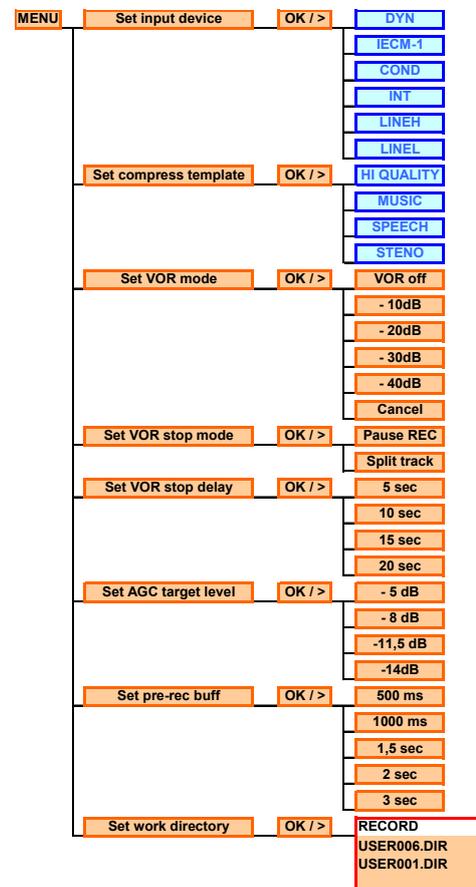
- **Set AGC target level:** This sub-menu permits to select the mean maximum target recording level. 4 levels are available.

- **Set pre-rec buffer:** Permits to select the size of the pre-record (in seconds or milliseconds).

- **Set Loop mode:** Permits to active a playback loop. There are 4 available options: "No loop", "Current" (actives the loop just for the selected audio file), "Order" (active a loop with all the audio files, playing them back in increasing order) and "Random" (same as "Order" but with a random order).

- **Set search speed:** Permits to increase the search speed.

- **Set work directory:** Select the preferred sub-directory into which, files are to be stored (record or play) and press "**OK**".

Work directories can only be created in the "**MANAGER**" menu. The other directories, like "USER0001.DIR", are the ones that include graphical information as well as editing information and should not be used to store other audio files.

4. SETUP MENU.

The "**SETUP**" menu gives access to several sub-menus. The most important are the compress templates creation and the input devices manager.

To access to "SETUP" menu from the main display, press "**C**". The microphone and folder icons appear. Press and hold the "▷" key until the screwdriver icon appears. By using the " ◁ " or " ▷ " keys, select the screwdriver icon and press "**OK**".

By surfing through the different menu windows, be aware that in some cases not only the "**OK**" key can be used to advance one step but also the " △ " and " ▽ " keys.

To go back one step or to escape from a particular screen press "**C**".
When it appears, select the microphone icon and press "**OK**" to return to the main display.
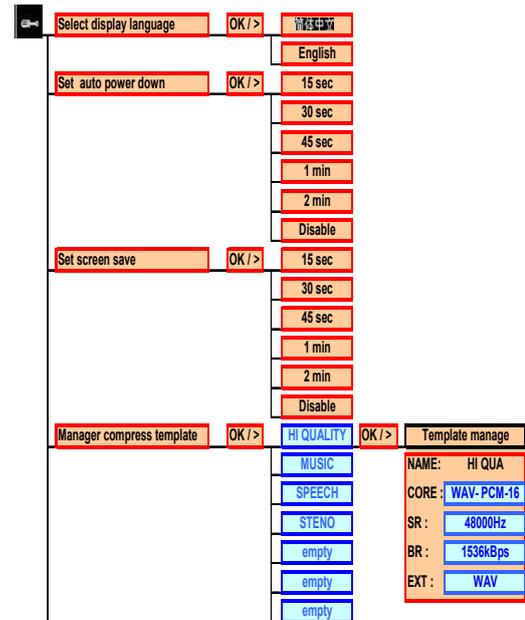
- **Select display language:** Actually 3 languages are available: English, Spanish and Chinese.

- **Set auto power down:** This menu allows 5 possible settings to power down the machine when no keys are pressed for a centain period (except in record, edit or play mode). To turn the auto power down off, select "**Disable**".

- **Set screen save:** To save battery power, the screen can be turned off automatically with 5 different settings. To turn the screen save off, select "**Disable**".

    If this mode is active, when no keys are pressed during the selected period, the display will turn off. Push any key to turn on again the display.

- **Manager compress template:** Before the templates can be selected from the "PRESET MENU", they must be created and stored first. Maximum 10 templates can be entered. They are used to store different configurations and provide a quick access to them.

    To create a new template or edit a previously created one, select the desired one from the list that appears ("Empty" is you want to create a new one) y press "**OK**". The "Template manager" window will appear, where you can define the following parameters:

    - **NAME:** The selected character can be changed by using the "+"and "-" ouput volume buttons. Press the " ▷ " key to jump to the next character. Maximum 6 characters can be entered. To validate the new name press the " ▽ " key to go to the next step.

- **CORE (Recording file compression type setting):** Select one of the possibilities using the " ◁ " or " ▷ " key and press the " ▽ "key to go to the next step.

- **S.R. (Sampling frequency setting):** Several options are available, depending on the file compression type selected. Select one of the possibilities using the " ◁ " or " ▷ " keys and press the " ▽ " to go to the next step.

- **B.R. (Bitrate and mono/stereo mode setting):** Several options are available (see the table at the end of the manual). Select oneof the possibilities using the " ◁ " or " ▷ " keys and press the " ▽ " to go to the next step.

- **EXT (File extension setting):** By using the "**+**" or "**-** " output volume keys, the selected character can be changed. Press the " ▷ " key to proceed to the next character position. To confirm the new extension name, press "**OK**". Maximum 3 characters can be entered.

- **Manager input device:** This allows to define a new input device or edit a previously created one. Select the desired one from the list that appears ("Empty" is you want to create a new one) y press "**OK**". The "InDev manager" window will appear, where you can define the following parameters:

  - **NAME:** The selected character can be changed by using the "+"and "-" ouput volume buttons. Press the " ▷ " key to jump to the next character. To validate the new name press the " ▽ " key to go to the next step.
  - **TYPE:** This sub-menu gives the selection of the input that will be used for recording. By using the " ◁ "or " ▷ " keys, select the corresponding input type and press " ▽ " to go to the next step.

    The available options in this sub-menu are: "**INT-MIC**" (built-in microphone), "**EXT-MIC**" (external microphone), "**LINE**" (line signal), "**LINE HI**" (high level line signal: +0 dB fixed gain) and "**LINE LO**" (low level line signal: +24 dB fixed gain).
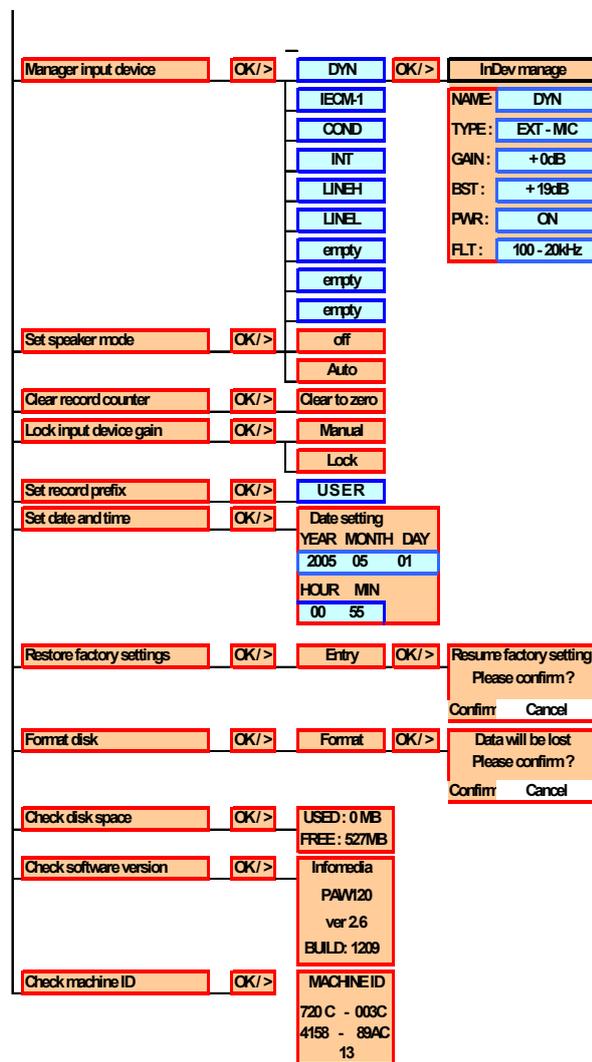
Manager input device	OK / >	DYN	OK / >	InDev manage	
		IECM-1		NAME:	DYN
		COND		TYPE:	EXT - MIC
		INT		GAIN:	+ 0dB
		LINEH		BST:	+ 19dB
		LINEL		PWR:	ON
		empty		FLT:	100 - 20kHz
		empty			
		empty			
Set speaker mode	OK / >	off			
		Auto			
Clear record counter	OK / >	Clear to zero			
Lock input device gain	OK / >	Manual			
		Lock			
Set record prefix	OK / >	USER			
Set date and time	OK / >	Date setting			

Date setting
YEAR MONTH DAY
2005   05   01
HOUR MIN
00   55

Restore factory settings	OK / >	Entry	OK / >	Resume factory setting Please confirm?
				Confirm Cancel
Format disk	OK / >	Format	OK / >	Data will be lost Please confirm?
				Confirm Cancel
Check disk space	OK / >	USED : 0 MB FREE : 527MB		
Check software version	OK / >	Infomedia PAW120 ver 2.6 BUILD: 1209		
Check machine ID	OK / >	MACHINE ID 720 C - 003C 4158 - 89AC 13		

☐ Datos definidos por el USUARIO

- **GAIN:** The input device gain can be pre-adjusted. To modify the value, if it's possible, use the "◁" or "▷" keys. Once the corresponding value is set, press "▽" to go to the next step.

- **BST:** Only for "**EXT-MIC**" an additional boost can be added to the previous gain setting. By pressing the "◁" or "▷" keys, the boost can be set to +19dB or +34 dB. Once the corresponding setting is made, press "▽" to go to the next step.

- **PWR:** Power can only be turned on for "**EXT- MIC**". The power available for the Mic is 3V dc. By pressing the "◁" or "▷" keys, power can be turned ON or OFF.

- **FLT:** A filter can be selected for "**EXT-MIC**". By pressing the "◁" or "▷" keys, you can select one of the two available options. Press "**OK**" to validate.

- **Set speaker mode:** The AEQ PAW120 has a built-in speaker for audio monitoring. The speaker can be turned "**Off**" or set to "**Auto**". In the "**Auto**" mode the speaker is active during playback or editing only. During record or monitoring (EE) mode, the speaker is turned off.

- **Lock input device gain:** Permits to lock or unlock the input gain adjustment from the record or pre-record display. Normally the input gain is stored in the input templates.

- **Set record name prefix:** This sub-menu allows 4 characters to be entered. Once being in the "**Input record prefix**" menu use the "**+**" or "**-**" output volume keys to select the corresponding character. Press the "▷" key for the next character position. Once all the characters are entered, press "**OK**".

- **Set date and time:** It permits to set the correct time start and date for each recording. Use the "△" or "▽" keys to set or "▷" keys to go to the next step. Once the settings made, press "**OK**".

- **Clear record counter:** Every recording has an index number incrementing automatically. Resetting the counter, by pressing "**OK**" when "**Clear to zero**" is shown, resets it to 1. The next recording will have the full name XXXX0001. If there are still files in memory and the USER name has not been changed, the next recording with the same name prefix and index will overwrite the old one.

- **Restore factory settings:** This sub-menu permits to restore the factory settings, including the template settings names, input devices etc.

- **Format disk:** If you need to erase all information on the internal memory, the fastest way is to format it. Once formatted, "**No File**" will be shown on the display. The three XXX.DAT files in the "**SYSINI**" folder will not be deleted.

- **Check disk space:** Indicates in Mbytes, the remaining space left in the memory and the used space up to now.

- **Check software version:** This sub-menu shows the type of the machine and the software version installed.

- **Check machine ID:** This sub-menu shows the serie number of the machine.

5. FILE / FOLDER MANAGER.


```
MANAGER ⇌  ▭
WAV-PCM16 48k 1536k ST
000:02        05-11-07
                17:21
📁 USER0013.DIR
📁 USER0014.DIR
📁 USER0015.DIR
📁 USER0016.DIR
🖊 USER0011.WAV
🖊 USER0012.WAV
```

The "**MANAGER**" acts like the explorer on a PC. It offers the possibility to create, erase, move, copy and rename directories or files.

To access to "**MANAGER**" from the main display, press "**C**" and use the ◁ " or "▷" key to select the folder icon and then press "**OK**".

- **Return to root:** To return to ROOT level, press "**OK**", then select "**Return**" and press "**OK**" again.

- **Entering a directory:** Highlight the directory name and press "**OK**". Then select "**Entry**" and press "**OK**". The files in this directory will then be shown.

- **Erasing a directory:** To erase a directory, highlight the directory name and press "**OK**". Then select "**Erase**" followed by "**OK**". A confirmation window appears to confirm the erasure of the directory and all included files. If "**DELE**" is selected the directory and all included files will be deleted.

- **Making a directory:** Press "**OK**" and select "**Make dir**". Press "**OK**" once and the folder "**NEWDIR**" will be shown on the display.

- **Renaming a directory:** To rename a directory, highlight the directory

name and press "**OK**". Then select "**Rename**" and press "**OK**". The selected character can now be changed by using the "**+**" or "**-**" output volume keys. Press the "▷" key to move to the next character. Press "**OK**" when completed. A maximum of 8 characters can be entered.
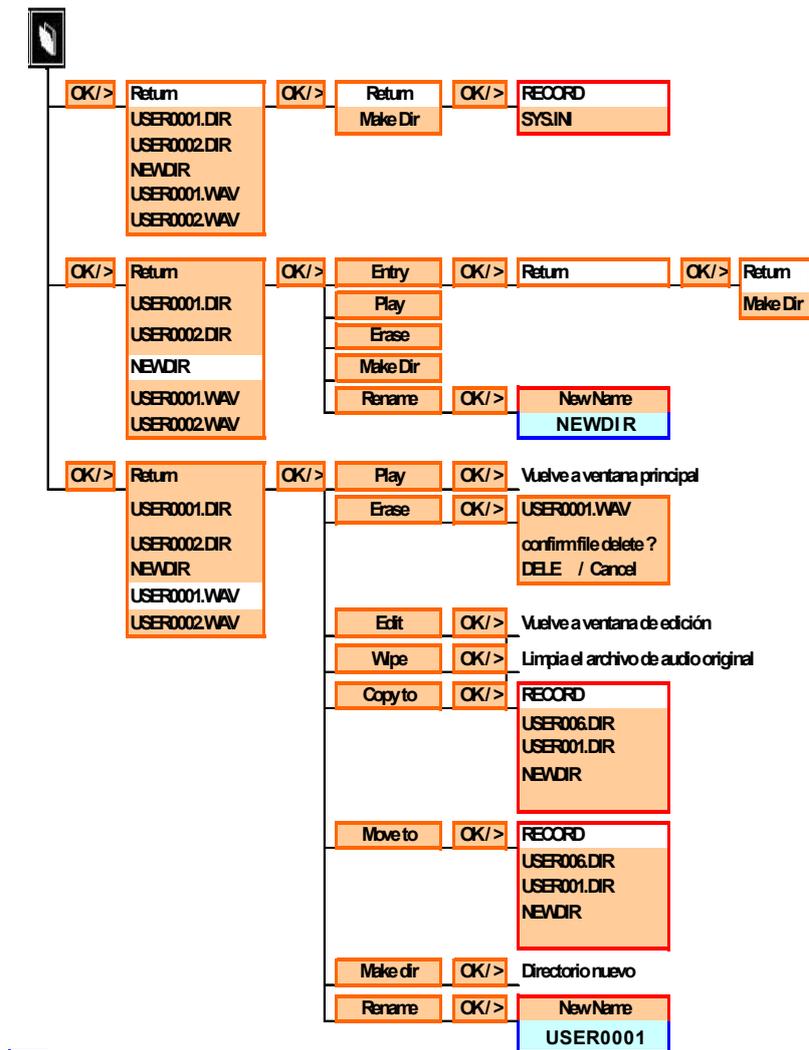
- **Erasing a file:** To erase a file, highlight the file name and press "**OK**". Then select "**Erase**" followed by "**OK**". A confirmation window will appear. Select "**DELE**" and confirm by pressing "**OK**".

- **Editing a file:** Highlight the file name and press "**OK**". Then select "**Edit**", press "**OK**" and the selected audio file will be shown in the edit display. Editing is only possible on audio files recorded with the AEQ PAW120. All imported audio files via USB can not be edited.

  If the selected audio file is shown with the icon ![icon] it can be edited; if it is shown with the icon ![icon] it can not be edited. All MPEG files recorded on the PAW120 using 44.1 KHz sampling can also not be edited.

  After editing, the original audio file is not at all modified. The editing information is stored in separated data files. When this audio file is copied to the PC or MAC it still has his original file length, but when this file is played back on the machine, it will only playback the parts decided by the editing.

- **Wiping a file:** Highlight the file name and press "**OK**"; then select "**Wipe**" and press "**OK**". This function creates a new file that is a copy of the original audio file where the edition cuts have been applied (therefore it will have less lenght than the original). This new file name is the same but with a number 1 at the end (if you apply this function to USER0005.WAV file, for instante, the USER0005-1.WAV file will be created). If you edit several time the original file and, after each edition, you apply this function, new files will be created ended on 1, 2, 3...

- **Copying a file:** To copy a file from the ROOT or from one directory to another, highlight the file to be copied and press "**OK**". Select "**Copy to**" and press "**OK**". Select the new directory (by pressing the "△", "▽", "◁" and "▷" keys) and press "**OK**".

- **Moving a file:** To move a file from the ROOT or from one directory to another, highlight the file to be moved and press "**OK**". Select "**Move to**" and press "**OK**". Select the new directory (by pressing the "△", "▽", "◁" and "▷" keys) and press "**OK**".

6. EDITION.

The AEQ PAW120 is fitted with a simple audio editor. It only allows to remove sections of unwanted audio. This is done by setting 2 edition markers (A and B) and then deleting the portion between these 2 points.

To start editing a recorded file, first go to the "**MANAGER**" menu and select the file that needs to be edited. Press the " 🗐✂ " key or press "**OK**", select "**Edit**" and press "**OK**" again to start editing.

6.1. EDITION DISPLAY.
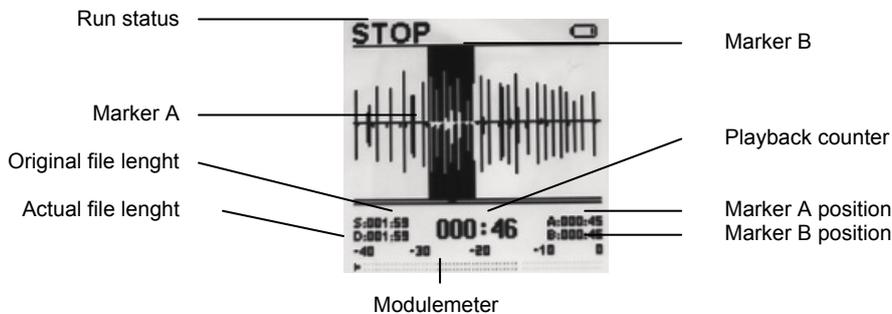
6.2. AUDIO EDITION.

The audio file appears graphically. The virtual playback head is in the middle of the screen. The full length of the screen corresponds approximately to 10 seconds of sound (without zooming). Press the " 🔵 " key four times to modify resolution and the available options will appear: 1, 3, 6 or 10 frames/pixel.

To start or to stop the playback, press the " ▶■⏻ " key.

You can move though the file by pressing the " ◁ " and " ▷ " keys or by pressing the " △ " and " ▽ " keys to do it at bigger intervals. If you need to place the playback head in an exact position, press the " 🔵 " key once. A sub-window appears permitting to enter in minutes and seconds the requested position by pressing the " ◁ ", " ▷ ", " △ " and " ▽ " keys. Once all numbers are entered, press "**OK**".
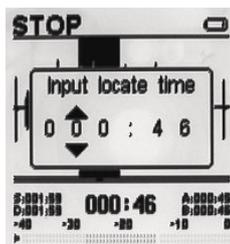
If recording was made with markers, press the " 🔵 " key twice and a list of them will appear where you can select one to jump to its position.

Press the " A-B/☀ " key once to set the first edition marker (A) during play or record; press the " A-B/☀ " key a second time to set the second marker (B). Press as well the " A-B/☀ " key, to move from one marker to the other one. Press and hold the " A-B/☀ " to cancel selection. If you want to save the selected section in a new file, press the "**OK**" key (this new file name is the same but with a number 1 at the end; if you make several selections new files will be created ended on 1, 2, 3...).

Once the 2 markers are set, if you press the " ▶■ⓞ " key, it will start the playback of the 3 seconds before the marker A, then it will jump over the marked area and will play the 3 seconds after the marker B. This allows you to verify the playback before cutting. If the AGC switch is moved to "**ON**" position, when you press the " ▶■ⓞ " key the section between the 2 marker will be played back.

If after verifying, the edition markers are in the right place, press the " 🗐✂ " key and the marked area will be removed.

If after verifying, one of the markers is not in the right place, it must be moved. In the stop mode, first select the misplaced marker by pressing the " A-B/☀ " key . By pressing the "◁ " and "▷ " keys, the marker will move step-by-step to left and right respectively. If the key is pressed and held, the marker will move at bigger intervals. If the same action is repeated during play, the corresponding marker will automatically jump to the play head position.

If you edit several times a file, you can return to any of the previous situations by pressing the " 🔵 " key three times and selecting one of the files of the list that appears.

Once the file is edited, edition can be saved by pressing the "**C**" key . A sub-window appears giving the possibility to return to the edit window by selecting "**Cancel**", to abort the edition by selecting "**Don´t**" or to save the changes by selecting "**Save**".

After editing, the original audio file is not at all modified. The editing information is stored in separated data files. When this audio file is copied to the PC or MAC it still has his original file length, but when this file is played back on the machine, it will only playback the parts decided by the editing.

If you need a file where these changes are applied, go to the "MANAGER" menu to select the edited file, press "**OK**", then "**Wipe**" and press "**OK**" again. This function creates a new file that is a copy of the original audio file where the edition cuts have been applied.

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7. USB.

The USB port of AEQ PAW120 recorder has two purposes: file download and external DC powering.

As the internal memory of the PAW120 cannot be removed, audio can be extracted either through the line output in normal playback mode or alternatively via the USB port to the PC/MAC.

Connect the USB cable to the computer and to the recorder. The PAW120 will automatically switch on, being powered through the USB connection. A sub-window will appear giving the possibility to select "**USB Power**" or "**USB Transfer**". Make a selection and press the "**OK**" key.
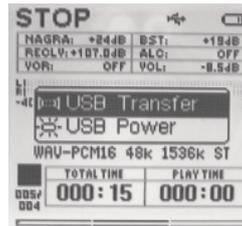
The "**USB Power**" option is simply for powering the PAW120 through the USB port for normal operation without internal batteries.

If "**USB Transfer**" is selected, in the PAW120 display a connection icon will be shown and the machine will immediately appear as a removable disk in the explorer of the PC/MAC:

The PAW120 recorder can do direct files transfer to Windows or Mac-OS without additional software.

Taking WindowsXP as an example, after connect the PAW120 to a computer, a found new device information window will be shown on the right down corner of screen. Wait until the notification that the new device can be used appears (it may take a few seconds).

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To remove the connection, double click the hot swap at the right down corner of the screen, safely remove device window will show up, double click "VFS disk Infomedia EDS USB device" device, and remove the device. If the system is Windows98 or Windows2000, must stop/remove safely first, then the USB connection between the PAW120 and computer can be stopped, otherwise it can cause data mission.
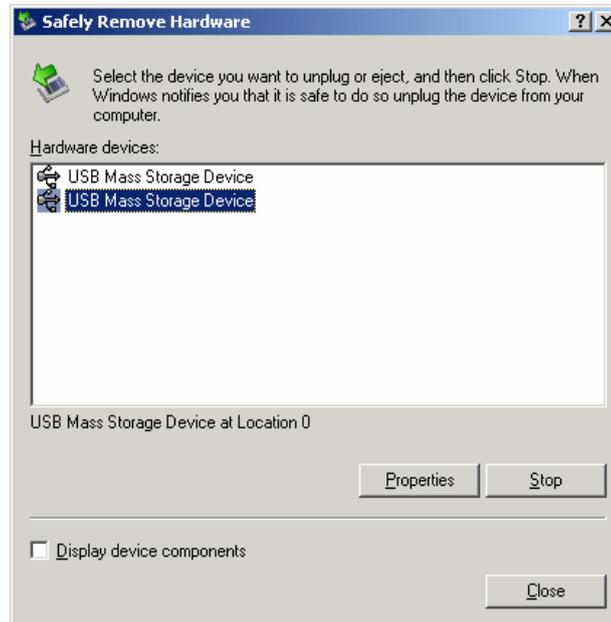
Note: Make sure the machine is full battery while communication.

8. SOFTWARE UPDATE.

The software of the PAW120 can be updated via USB connection. The file used for updating is named "**APP.COE**".

1. Turn off the recorder.
2. Press and hold the VOL+ button (or the UP key if the PAW120 unit has been manufactured before 2007); at this time, press POWER key until the red LED lights.
3. Stop pressing the keys: the system update menu will show up in the PAW120 display.
4. Connect the machine to a computer via USB cable.
5. Open the new removable disk that computer will find and copy the new "**APP.COE**", replacing the original file. If this file doesn't appear when you open the removable disk, uncheck the "Hide protected operating system files (recommended)" option in My Computer → Tools → Folder Options → View.
6. Remove safely the disk, remove USB cable and the recorder will power off automatically.
7. Turn on the recorder and check the software version.

Note: Must safely remove the disk first for the Windows98 or Windows2000 user, it can cause damage and upgrade failure. Make sure the battery is sufficient when updating the software.

If you have any questions, e-mail our technical department at sat@aeq.es, or contact techsupport@aeqbroadcast.com in the USA and Canada.

9. SPECIFICATIONS.

General

- Data Storage: On board 512MB or 1GB flash memory.
- Recording Method: Digital or Digital compression.
- Compression Type: MPEG 1 Layer 2/3, Linear PCM, G729a and CCITT a/μ-Law.
- Maximum recording time (for 512MB):

Bit rate	8 kbps	32 kbps	128 kbps	384 kbps
Maximum time	142 hours	35 hours	8 hours	2.9 hours

- Frequency response..10Hz to 20kHz: - 0.5dB
- Wow & flutter..................................... ....Below measurable limits
- Signal to noise ratio (playback) ....>89dB (bandwidth 22Hz to 22kHz)
- Dynamic range (line input) ....>96dB
- Microphone IN ....>122dB A-weighted
- THD&N @ 1kHz ref 0dBFS......................................<0.02% (bandwidth 22Hz to 22kHz)

Input and Output

- External MIC filter selection.......................................20 Hz - 20 kHz / 100 Hz - 20 kHz
- External MIC maximum gain..82dB
- External MIC minimum gain...19dB
- Earphone max power... 18mW(L) + 18m(W) (16Ohm)
- Line maximum input level...+17dBu
- Line maximum output level...+1.5dBu
- Inside mono MIC
- External stereo MIC 3.5mm stereo plug
- Unbalanced line-in 3.5mm stereo plug
- Unbalanced line-out 3.5mm stereo plug
- Stereo earphone output,3.5mm stereo plug
- USB1.1 interface

Physical

- Dimensions..121.4 x 51.5 x 23.0 mm
- Operating temperature..0~70ºC
- Operating humidity...20%-80%

Power Supply

- Internal Batteries..2 x AA batteries
- Consumption..3V, maximum 100mA

Input Device Parameters

Type	Analog gain	Boost	Power supply	Filter
INT MIC	0~10dB	———	———	———
EXT MIC	0~24dB	19/34dB	ON/OFF	20-20kHz 100-20kHz
LINE	0~24dB	———	———	———
LINE HI	0dB	———	———	———
LINE LO	24dB	———	———	———

Input Device Default Settings

Name	Type	Analog gain	Boost	Power supply	Filter
DYN	EXT MIC	+6dB	34dB	OFF	20-20kHz
IECM-1	EXT MIC	+9dB	19dB	ON	100-20kHz
COND	EXT MIC	+9dB	19dB	OFF	100-20KHz
INT	INT MIC	0dB		———	———
LINEH	LINE HI	0dB	———	———	———
LINEL	LINE LO	24dB	———	———	———

Compress Algorithm Parameters

Algorithm	Sampling Frequency	Bit Rate
Linear PCM 16 bits	48 kHz 44.1 kHz 32 kHz 24 kHz 22.05 kHz 16 kHz	768kbps mono, 1536kbps stereo, 705kbps mono, 1411kbps stereo, 512kbps mono, 1024kbps stereo, 384kbps mono, 768kbps stereo, 352kbps mono, 705kbps stereo, 256kbps mono, 512kbps stereo,
MPEG1 LayerII	48 kHz 44.1 kHz 32 kHz	32kbps mono, 48kbps mono, 56kbps mono, 64kbps mono, 64kbps stereo, 80kbps mono, 96kbps mono, 96kbps stereo, 112kbps mono, 112kbps stereo, 128kbps mono, 128kbps stereo, 160kbps mono, 160bps,stereo, 192kbps mono, 192kbps stereo, 224kbps stereo, 256kbps stereo, 320kbps stereo, 384kbps,stereo
MPEG1 LayerIII	48 kHz 44.1 kHz 32 kHz	32kbps mono, 40kbps mono, 48kbps mono, 56kbps mono, 64kbps mono, 64kbps stereo, 80kbps mono, 96kbps mono, 96kbps stereo, 112kbps mono, 112kbps stereo, 128kbps mono, 128kbps stereo, 160kbps mono, 160bps,stereo, 192kbps mono, 192kbps stereo, 224kbps stereo, 256kbps stereo, 320kbps stereo
CCITT a Law	48 kHz 44.1 kHz 32 kHz 24 kHz 22.05 kHz 16 kHz 12 kHz 11.025 kHz 8 kHz	384kbps mono, 768kbps stereo 352kbps mono, 705kbps stereo 256kbps mono, 512kbps stereo 192kbps mono, 384kbps stereo 176kbps mono, 352kbps stereo 128kbps mono, 256kbps stereo, 96kbps mono, 192kbps stereo, 88kbps mono, 176kbps stereo 64kbps mono, 128kbps stereo
CCITT µ Law	Same as CCITT a Law	Same as CCITT a Law
G.729.a	8 kHz	8kbps mono

Compress Template Default Settings

Name	File format algorithm	Sampling frequency	Bit rate	Extensión
HI QUA	WAV format 16bitPCM	48000Hz	1536kbps stereo	WAV
MUSIC	BWF format MP1L2	48000Hz	256kbps stereo	WAV
SPEECH	BWF format MP1L2	48000Hz	64kbps mono	WAV
STENO	WAV format G.729.a	8000Hz	8kbps mono	WAV

Attack and Decay Time

Sampling frequency	ATTACK TIME	DECAY TIME
48kbps	10ms	92ms
32kbps	15ms	137ms
8kbps	61ms	551ms

10. FAQ.

Problem	Possible Reason	Solution
The machine switched off when playback	Low batteries	Change batteries or power via USB
Cannot switch on the machine	1.Empty battery	1.Change new batteries or powerc via USB
	2.Keyboard is locked	2.Check keyboard lock
Big noise from earphones while recording	1.Too high volume of earphones	1.Turn down the volume
	2.Too high input gain	2.Adjust the input gain
SETUP menu does not show up	Has not held the RIGHT key long enough	Hold the RIGHT key when the menu selection dialog box pops up
Keyboard is not working	1.Keyboard is locked	1.Slide HOLD switch
	2.Hardware damage	2.Return to the shop
No signal or weak signal from Right-Channel output when use internal speaker to playback	Internal speaker connected to Left-Channel only	Use earphone or an external speaker to playback
No sound comes out when use internal speaker to playback	1.Inserted earphones	1.Remove earphones
	2.Speaker is disabled in system setting	2.Change the setting to "Auto"
The machine cannot automatically switched off	1.When USB cable is connected, the machine cannot be switched off	1.Remove USB cable
	2."Set auto power down" is disabled in system setting	2.Select a time for auto power down
When use internal MIC for recording, same signal from both Right/Left Channel	Internal MIC is single channel. Even though the compress template is stereo, the result is still single channel	When use single channel for recording, more disk space can be saved
Weak output signal	Low volume setting	When the volume is on maximum, the highest signal output is +1dBu

10. WARRANTY.

The portable equipment is subject to operation under hard working conditions, therefore the use and maintenance of the equipment requires a careful handling.

This warranty does not cover any failure of the Product due to normal use, or due to misuse, including but not limited to use in other than the normal and customary manner, in accordance with the AEQ instructions for use and maintenance of the Product. Nor does this warranty cover any failure of the Product due to but not limited to accident, software or hardware modification or adjustment, acts of God or damage resulting from liquid, sand, dirt, scratching, cuts, falling, hits, knocks, usage or storage out of the standard temperature range.

A rechargeable battery can be charged and discharged more than a hundred times. However, it will eventually wear out; this is not a defect and corresponds to normal use. Surfaces and glasses can change of colours when they are exposed to strong light or temperature.

Your personal settings, recordings and other information may be lost when your AEQ Product is repaired or replaced. AEQ does not take any responsibility for any lost information of any kind and will not reimburse you for any such loss. You should always make backup copies of all the information stored on your AEQ Product before handing in your AEQ Product for repair or replacement.