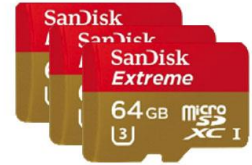# 06. AUDIOMOTH CONFIGURATION & DATA MANAGEMENT

WHAT DO I NEED BEFORE I START?

- Computer
- 3 AA Batteries
- Micro SD card (memory card)
- Micro USB cable
- AudioMoth audio recorder

EXTRA STEP: NEED TO DO IT ONLY ONCE!

- Download the AudioMoth Flash App on your computer from this link and install it: https://www.openacousticdevices.info/applications
- Connect your recorder using the USB cable to the computer. You will notice a **GREEN** light!
- *Do not include the batteries or the memory card in this process*
- Open the App
- Click **Flash AudioMoth**

CONGRATULATIONS! YOU JUST UPDATED THE FIRMWARE ON THE RECORDER
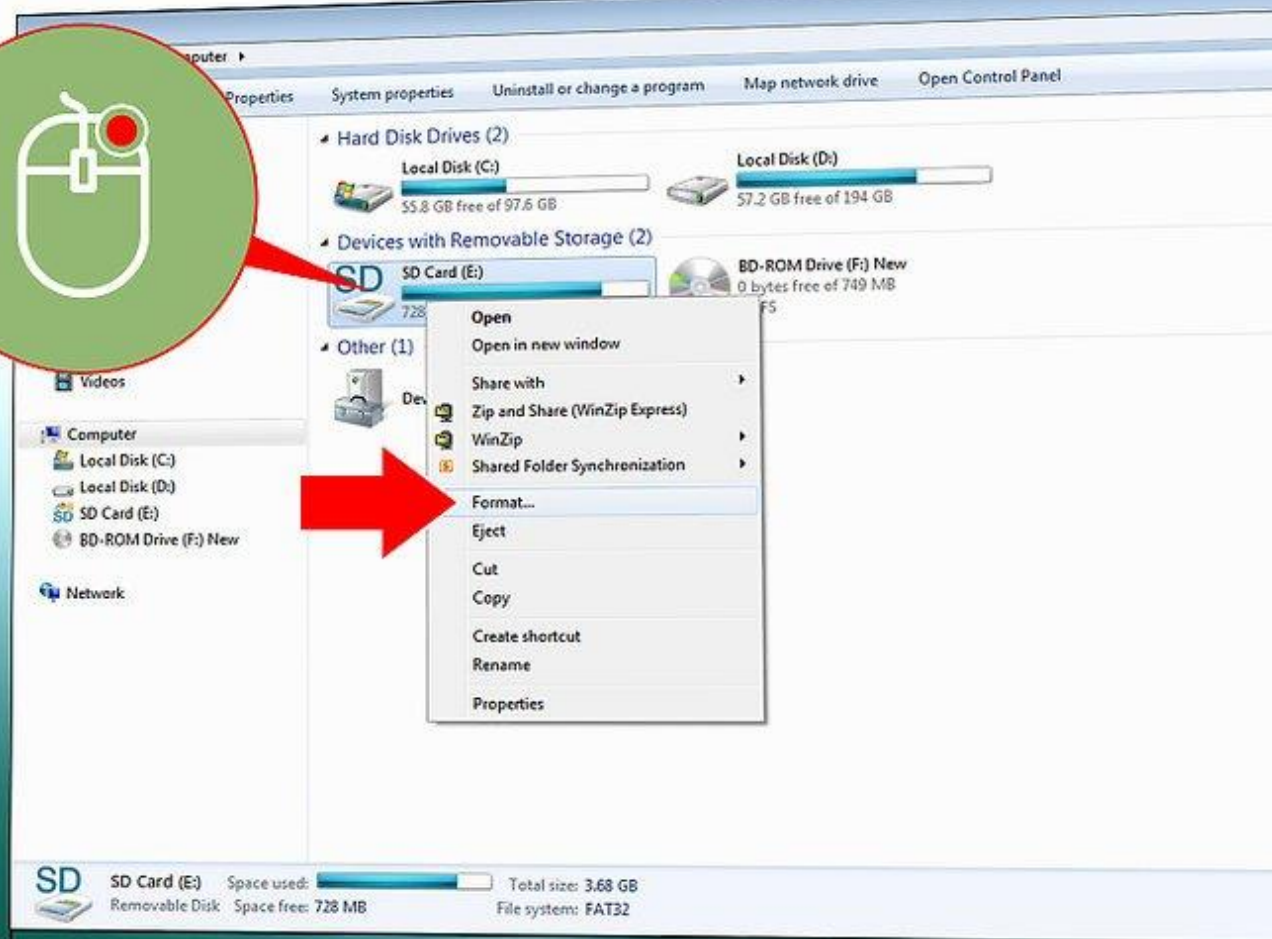
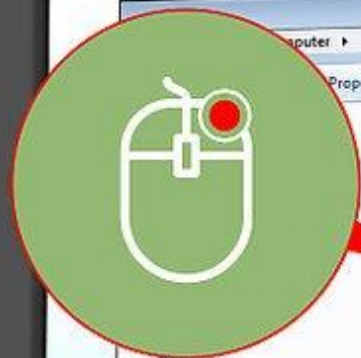# NOW, WE CAN **CONFIGURE IT!**

HAVE YOU ALREADY USED THE FLASH APP? IF YES, PROCEED!
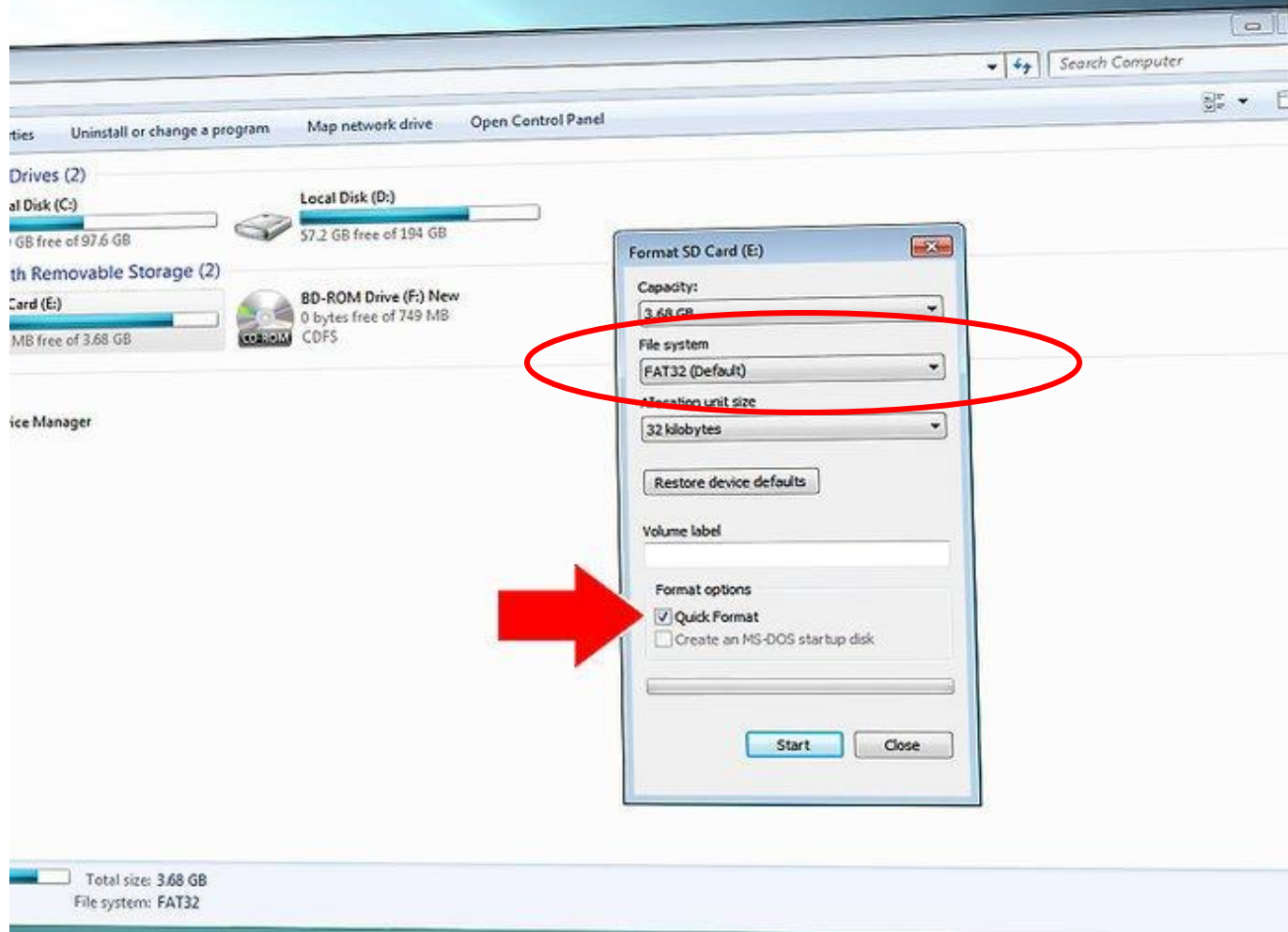
NO? Go back and complete that step

MEMORY CARD FORMATTING

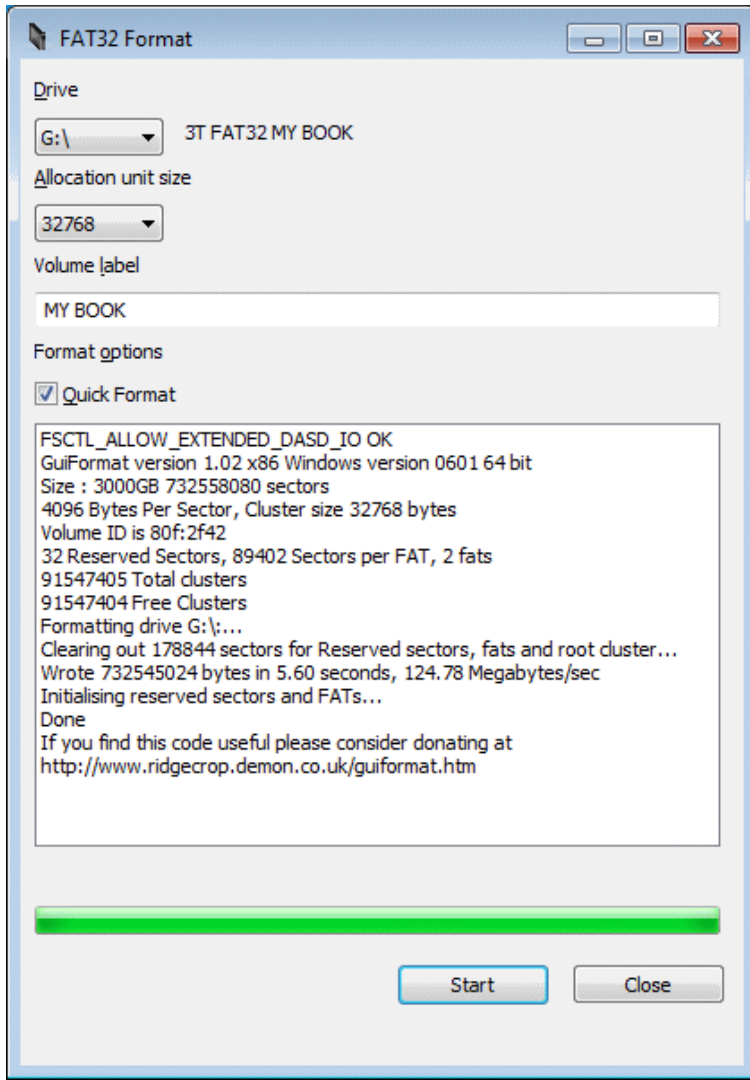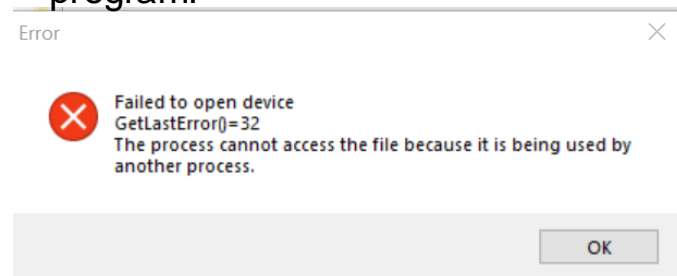- Insert the SD card into your laptop (use a card adaptor if needed)

Computer ▸

Properties   System properties   Uninstall or change a program   Map network drive   Open Control Panel

▲ Hard Disk Drives (2)

Local Disk (C:)
55.8 GB free of 97.6 GB

Local Disk (D:)
57.2 GB free of 194 GB

▲ Devices with Removable Storage (2)

SD   SD Card (E:)
728

BD-ROM Drive (F:) New
0 bytes free of 749 MB
F5

▲ Other (1)

Dev

	Open
	Open in new window
	Share with ▶
	Zip and Share (WinZip Express)
	WinZip ▶
	Shared Folder Synchronization ▶
➡	Format...
	Eject
	Cut
	Copy
	Create shortcut
	Rename
	Properties

📹 Videos

💻 Computer
   💾 Local Disk (C:)
   💿 Local Disk (D:)
   SD SD Card (E:)
   💿 BD-ROM Drive (F:) New

🖧 Network

SD   SD Card (E:)   Space used: ▬▬▬▬▬   Total size: 3.68 GB
         Removable Disk   Space free: 728 MB   File system: FAT32

Confirm that you are formatting to FAT32

I WAS NOT ABLE TO FORMAT MY MEMORY CARD. WHAT DO I DO?

- Download the software guiformat.exe from http://ridgecrop.co.uk/index.htm?guiformat.htm

- Insert the microSD card into the laptop/computer

- Open the program guiformat.exe

- Choose the Drive that belongs to the SD card from the drop-down menu

- Select Allocation Unit Size as 32768

- Select Quick Format > Start

FAT32 Format

Drive
G:\   3T FAT32 MY BOOK

Allocation unit size
32768

Volume label
MY BOOK

Format options
☑ Quick Format

FSCTL_ALLOW_EXTENDED_DASD_IO OK
GuiFormat version 1.02 x86 Windows version 0601 64 bit
Size : 3000GB 732558080 sectors
4096 Bytes Per Sector, Cluster size 32768 bytes
Volume ID is 80f:2f42
32 Reserved Sectors, 89402 Sectors per FAT, 2 fats
91547405 Total clusters
91547404 Free Clusters
Formatting drive G:\:...
Clearing out 178844 sectors for Reserved sectors, fats and root cluster...
Wrote 732545024 bytes in 5.60 seconds, 124.78 Megabytes/sec
Initialising reserved sectors and FATs...
Done
If you find this code useful please consider donating at
http://www.ridgecrop.demon.co.uk/guiformat.htm

Start   Close

If you get an error like the one below, please close all files that are open on your computer and restart this program!

Error   ✕

❌ Failed to open device
     GetLastError()=32
     The process cannot access the file because it is being used by
     another process.

OK

INSERT BATTERIES AND MEMORY CARD INTO YOUR RECORDER

- Add 3 AA batteries to the AudioMoth

- Insert the microSD card to your recorder
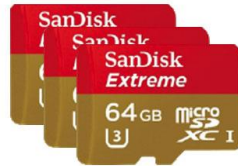
BEFORE WE CONFIGURE THE RECORDER...

- Download the AudioMoth configuration App on your laptop/computer from the link below and install it

- https://www.openacousticdevices.info/applications

FINALLY...WE CAN CONFIGURE OUR RECORDER!

- Make sure your AudioMoth recorder's white button on the side is pointing to **USB/OFF**

- Connect the recorder (**make sure you have included batteries and the memory card)** to the laptop/computer with the USB cable. You will notice a **Green** light!

- Open the configuration app
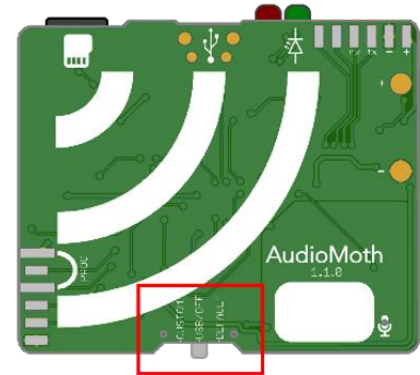
AudioMoth Configuration App

File Process Time Help

-- : -- : -- --/--/---- UTC

Device ID:
Firmware description:
Firmware version:
Battery:

Recording | Schedule | Filtering | Advanced

Sample rate (kHz):   8 16 32 **48** 96 192 250 384

Gain: Low **Med** High

Enable sleep/record cyclic recording: ☑

Sleep duration (hh:mm:ss):   00:00:05

Recording duration (hh:mm:ss):   00:00:55

Enable LED: ☑
Enable battery level indication: ☑
Use NiMH/LiPo voltage range for battery level indication: ☐

Each day this will produce 0 files, totalling 0 MB.
Daily energy consumption will be approximately 0 mAh.

Configure AudioMoth

QUICK WAY TO CONFIGURE:

- Click Time → Local time

- Do you see **UTC-4?**

- Is your battery voltage above 4.5V? (*If not, use another battery*)

- *Note down the Device ID in your **deployment-data.csv** file (for more information, please see section on Data Management)*

- Click File → Open configuration→ *select the **stVincent-parrot.config** file* from your folder

- Click **Configure AudioMoth** in green

CONGRATULATIONS! YOUR RECORDER IS READY FOR DEPLOYMENT

IF YOU WANT TO LEARN THE LONGER WAY TO CONFIGURE YOUR RECORDER.....

- Click Time → Local time

- Do you see **UTC-4?**

- Is your battery voltage above 4.5V? (*If not, use another battery*)

- *Note down the Device ID in your **deployment-data.csv** file (for more information, please see section on Data Management)*
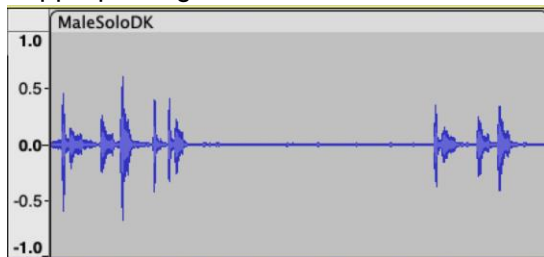
RECORDER SETTINGS: SAMPLE RATE

- Sample rate refers to the number of audio samples recorded every second by the recorder.

- Sampling rate must be ≥ 2X the highest frequency you want to record

RECORDER SETTINGS: GAIN

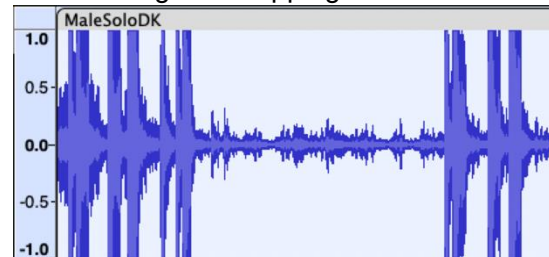- Gain refers to the amount of amplification applied to a signal before it is digitized and stored

Appropriate gain

Too little gain… lower quality

Too much gain… clipping

RECORDING SCHEDULE FOR THE ST. VINCENT'S PARROT

- Select Sample rate as **32kHz**
- Select **Medium** gain
- Select Sleep duration:
- Select Recording duration:

This means that the recorder will collect data for every XX minutes and sleep for every YY minutes

Click the box next to 'Use NiMH/LiPo…' if you are using rechargeable batteries

Recording schedule for the St. Vincent's parrot

- Click on the **Schedule** tab (*right next to the Recording tab*)
- Add start recording as 04:00 and end recording as 07:00; Click **Add recording period**
- We will also add start recording as 11:00 and end recording as 14:00; Click **Add recording period**
- We will also add start recording as 16:00 and end recording as 19:00; Click **Add recording period**

Now we have created three different schedules and the recorder will collect data once in the morning, afternoon and evening

ADVANCED SETTINGS

- Click on the **Advanced** tab
- Mark the box next to 'Use daily folder for generated WAV files'
- Mark the box next to 'Enable energy saver mode'

Click **Configure AudioMoth** in green

LET'S DEPLOY THE RECORDER!

DATA MANAGEMENT

- Data organization

- Data storage

DATA ORGANIZATION

- Data organization allows for easy access and interpretation of data

- To organize data, we need standardized ways in which data is organized or collected.

- Example: a **unique** format for filenames, latitude, longitude etc.

THIS SLIDE WILL REFER TO INFORMATION FROM KOBOCOLLECT (VIJAY TO EDIT IT)

HOW DO WE ORGANIZE AND MANAGE OUR DATA?

FIRST WE WILL MAKE COPIES OF YOUR DATA!

- The field is often not the best place to back up data

- Make back-up copies in an environment that where you can ensure the safe transfer of data

- Always make two copies before deleting or reusing media

WHAT SHOULD YOU TAKE FROM THIS PRESENTATION?

- Make at least two copies of your data as soon as is safe to do so
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STEP 2: MAKING THE COPIES IN HARD DRIVES

- Connect the SD card using an adaptor

- For example, let's assume this SD card corresponds to XXYY_site_YY

- Create a folder with the same name in hard drive 1

- Repeat the above for hard drive 2

- Vijay to add information about deployment cycle and naming hard drives

CHECK THAT ALL DATA WERE COPIED OVER

- Do not assume that computers and drives and networks always make perfect copies.

- Copy jobs can easily be interrupted

- Check that both folders are the same size and have the same number of files

YOU HAVE RETRIEVED YOUR RECORDER….WHAT DOES YOUR DATA LOOK LIKE?

WHEN YOU LOAD YOUR SD CARD IN YOUR COMPUTER...THIS IS WHAT YOU WILL SEE

20240120_183000	1/20/2024 8:05 AM	WAV File	18,751 KB
20240120_193000	1/20/2024 9:05 AM	WAV File	18,751 KB
20240120_203000	1/20/2024 10:05 AM	WAV File	18,751 KB
20240120_213000	1/20/2024 11:05 AM	WAV File	18,751 KB
20240120_223000	1/20/2024 12:05 PM	WAV File	18,751 KB
20240120_233000	1/20/2024 1:05 PM	WAV File	18,751 KB

📁 20240121
📁 20240120

Each SD card will have folders of audio files. Each folder contains data for a single day of recording

Within each of those folders, you will data for that particular day

THANK YOU!