



# Joey Software

## *Installation and Operations Manual*

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***Nautics***  
***Group***



and



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# 1. JOEY SOFTWARE

The **Joey Software** package is used to configure and download audio recordings from the JOEY line of Transcoders from TTI such as the **Joey 1300**, the **BELT-Joey**, **CELL-Joey**, **J1W**, or **Joey2**.

The program also offers file conversion, playback facilities and limited audio enhancement and recording timers.

## 1.1 Computer Hardware Requirements

The recommended minimum requirements for **Joey Software** are,

- Pentium 4 2GHz CPU
- 512MB of RAM
- Windows™ 10 or 11 operating system
- Backwards compatible to Windows XP
- One USB port
- Sound card
- 50MB of hard disk space available
- CD writer + DirectCD™ or similar real-time writing software

**Note:** Up to 6GB free hard disk space is recommended for storage and conversion of recordings.

## 1.2 USB Download Cables



*Figure 1, The USB Download cables: Dongle 1 and Dongle 3*

## 2. INSTALLING JOEY SOFTWARE

To install the **Joey Software** package onto a Windows™ computer, you must log on to the computer with full **Administrator** privileges.

1. Insert the supplied **Joey Software** media into your computer.

2. ***If prompted by your operating system, select:***

Run **JoeySetup\_verx.x.x.exe**.

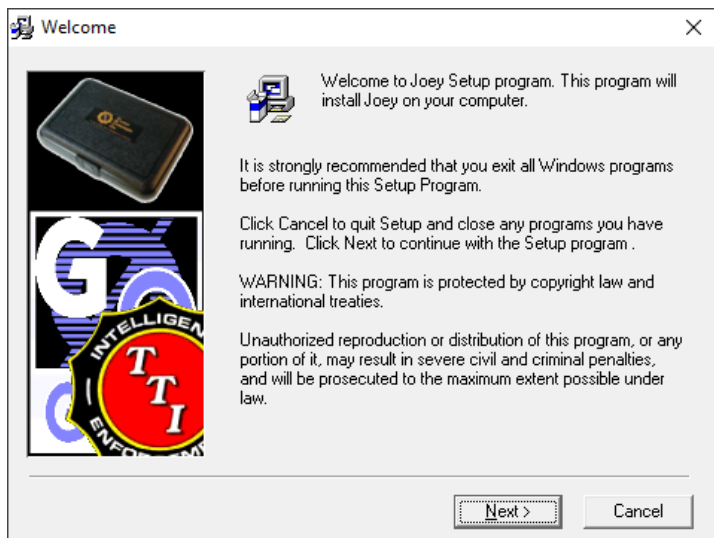
3. If your version of Windows does not prompt you to run the Setup program:

*Open Windows File Explorer and navigate to your media drive.*

*Double click **JoeySetup\_verx.x.x.exe***

*(where verx.x.x is the version of the software).*

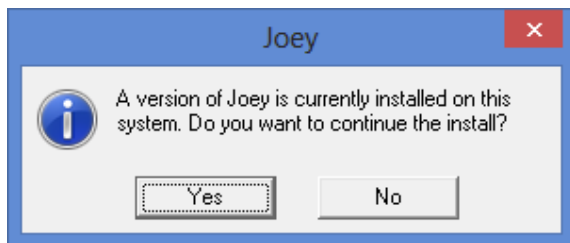
4. You may then be asked for permission to allow **Joey Software** to make changes to your computer, select **Yes** to continue installation




*Figure 2, Joey Software Welcome screen*

Press 

If you have installed the **Joey Software** package previously the following window is displayed.



Press  to continue with the installation.

The software license and copyright notice are displayed. Ensure you read the full license and understand your obligations.

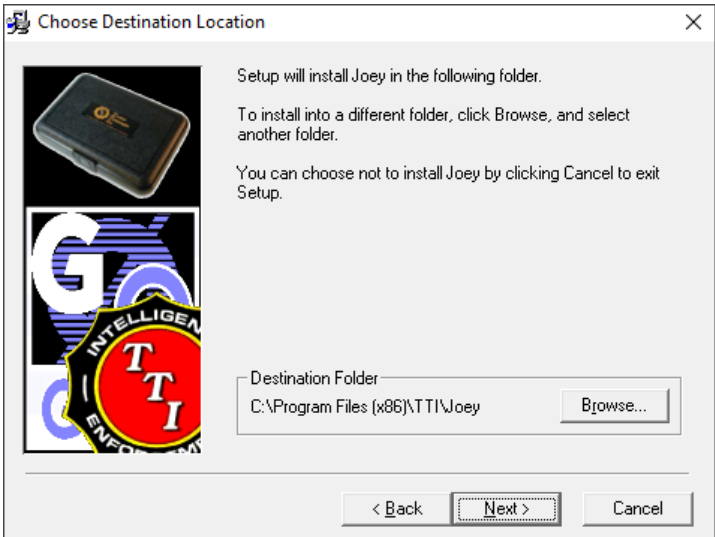


*Figure 3, Joey Software Copyright Notice*

Press



On the **Choose Destination Location** window, click **Browse** to navigate to the location where you want to install the **Joey Software**.

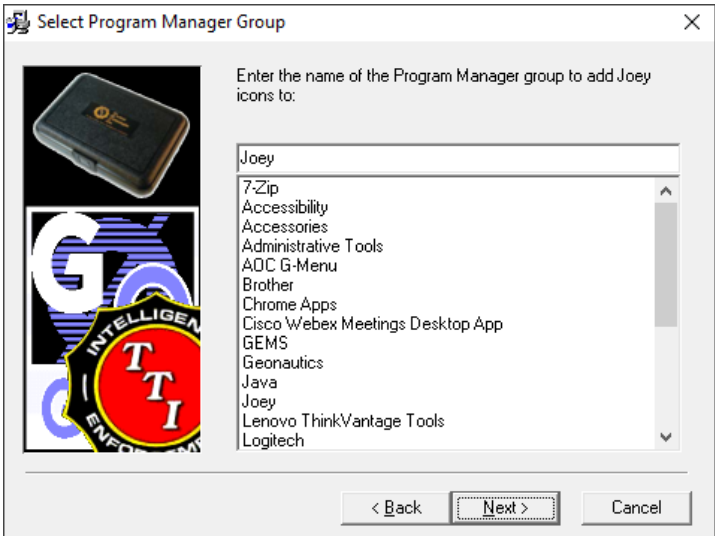


*Figure 4, Joey Software Folder selection*

Enter the destination folder where you want to install the software. If you are unsure, it is recommended that you accept the default values.

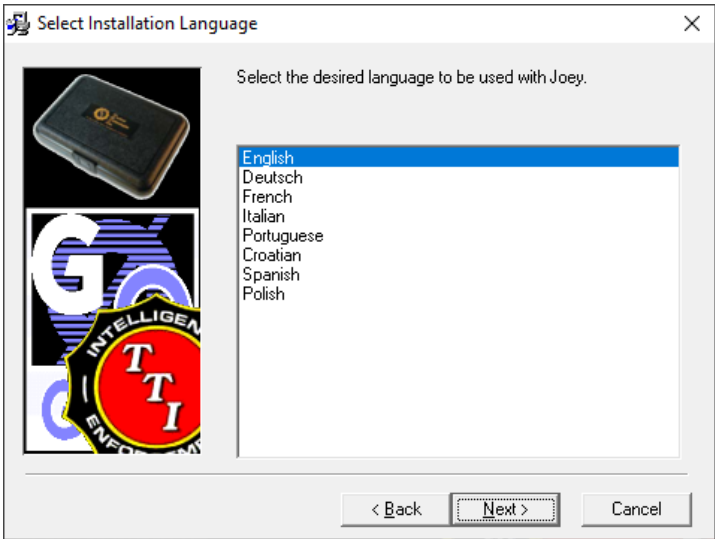
Press .

On the **Select Program Manager Group** window, select the name of the Program Manager group from the list to which to add the **Joey Software** icons.



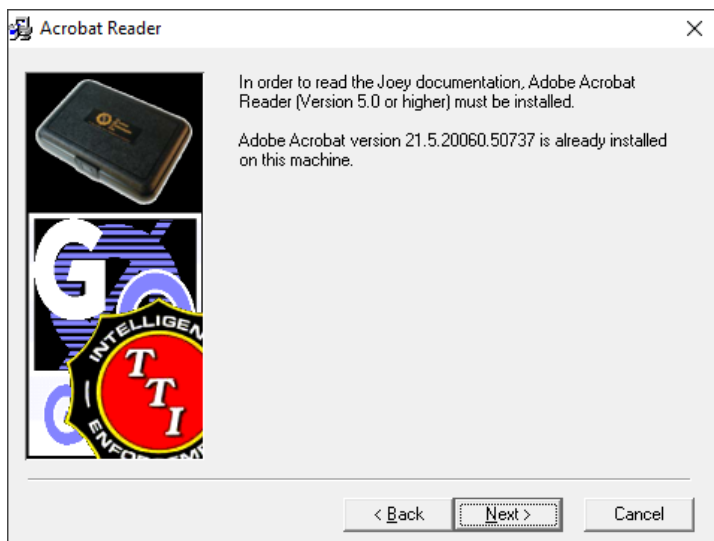
Press .

On the **Select Installation Language** window, select the language to be used with the **Joey Software**.



Press .

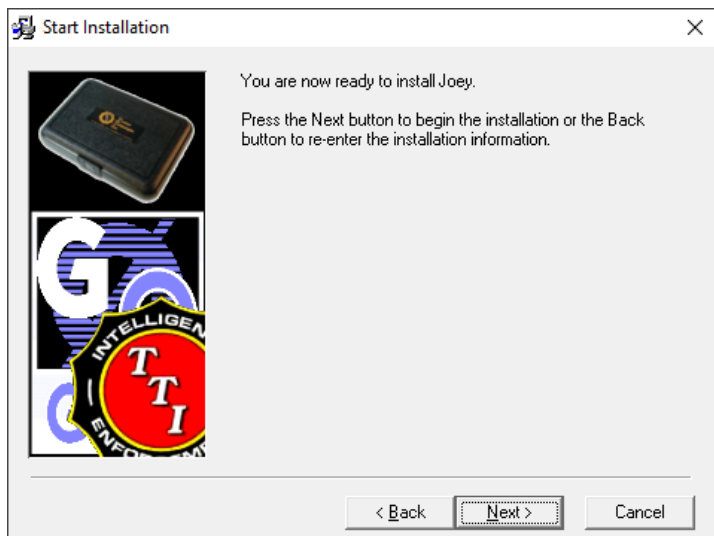
A message is displayed indicating that documentation associated with **Joey Software** (including this help file) is distributed in Adobe Acrobat format.



*Figure 5, Joey Software & Acrobat Reader*

Press .





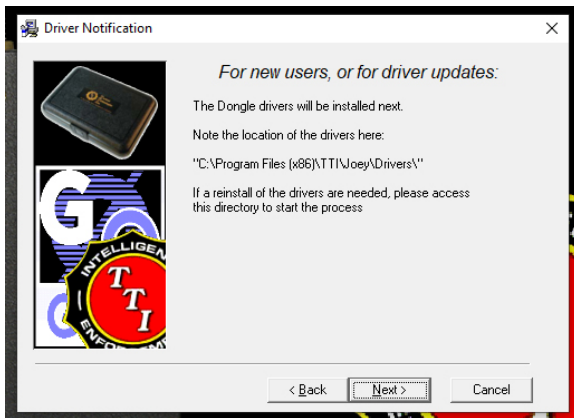
*Figure 6, Joey Software Installation*

**Joey Software** is now ready to be installed.


Press  to perform the installation.

A progress window appears while the program components are installed.

On completion the **Driver Notification** window is displayed.



*Figure 7, Joey Software Driver Notification*

Observe the information regarding the driver locations in the window above, and Press .

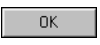
The installation complete window is displayed.



*Figure 8, Joey Software Installation Complete*

Press .

You are prompted to reboot the computer.

Press  to reboot the system immediately.



The computer must be rebooted before the **Joey Software** can be run.

### 3. CONNECTING THE HARDWARE

The **Joey** hardware is connected to a computer using one of two types of USB Downloader cables: **Dongle1** or **Dongle3**.

The **Dongle1** USB Downloader cable has a download speed of around 11MB per minute and can be used with all **Joey** models.

The **Dongle3** USB Downloader cable has typical speeds of 90MB per minute (connected to USB 2.0), where the hardware supports the faster download. For hardware without faster download support, around 9MB per minute is achieved.



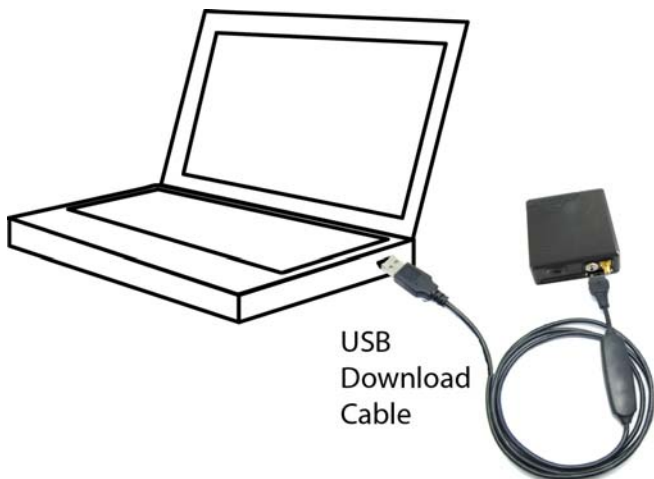
*Figure 9, Connecting a Joey via the Dongle 1 USB Download Cable*

If the USB Downloader Dongle has not previously been connected to the computer, a driver must be installed.

A step-by-step guide for Installing the USB device drivers is described in [APPENDIX A](#).

Ensure the **Joey Software** installation media is in the computer. (If you have previously installed **Joey Software** and an auto-install begins press  when you are warned it is already installed.)

### 3.1 Connecting USB Download cable



*Figure 10, Connect USB Downloader Cable & Joey to a Computer*

When the **Joey** is connected to the computer, the recorder portion of the hardware can be configured to the desired operational parameters and recordings downloaded using the **Joey Software** package. See [Section 4](#).

When using the USB Downloader Cable, the recorder draws power directly from the computer, so there is no need for a battery to be present.



*When powering the device from a Dongle 3 USB download cable, the JOEY SOFTWARE must be running to enable the Dongle.*

When the Joey hardware is disconnected from the USB Downloader Cable, the Joey recorder remembers the programmed configuration parameters and operates according to those parameters the next time power is applied.

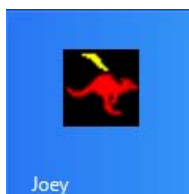


*Issues may arise with USB ports on some laptops and low-profile computers, The use of an externally powered USB Hub is advised if communication is erratic.*



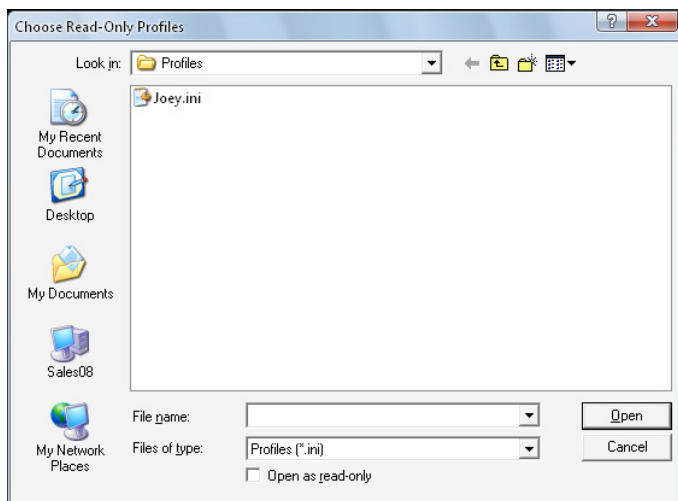
## 4. RUNNING JOEY SOFTWARE

In all versions of Windows, you can use the Windows™ **Start** menu or the desktop icon to run **Joey Software**.



In Windows 10 and 8 you can also select **Search** and then select **Joey** from the application list.

The first time the **Joey Software** is opened a profile needs to be selected. For the initial opening, select the “joey.ini” profile and click on the “Open” button. Profiles are explained in [Section 4.3](#).



*Figure 11, Selecting the Joey Profile*

On the first run, after the profiles window is closed, the configuration window appears. See [Section 4.2](#) for details.

## 4.1 Joey Software Main Window

If a PIN has been set ([Section 4.18](#)) or the recorder has “timer record mode” enabled ([Section 4.19](#)), an option window opens, requesting further user input, if not, the main program window opens.

The **Joey Software** program status displays “No Device Connected” until communication is achieved with the connected dongle.

When the hardware is connected to the computer the **Joey Software** automatically tries to interrogate the unit for its current profile and provides a listing of audio recordings currently residing in the recorder's memory.

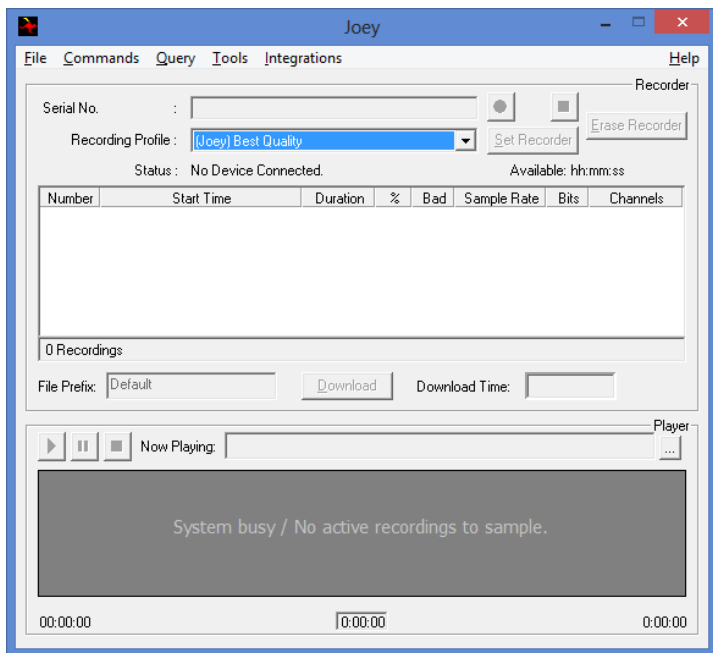


Figure 12, Joey Software Main Window

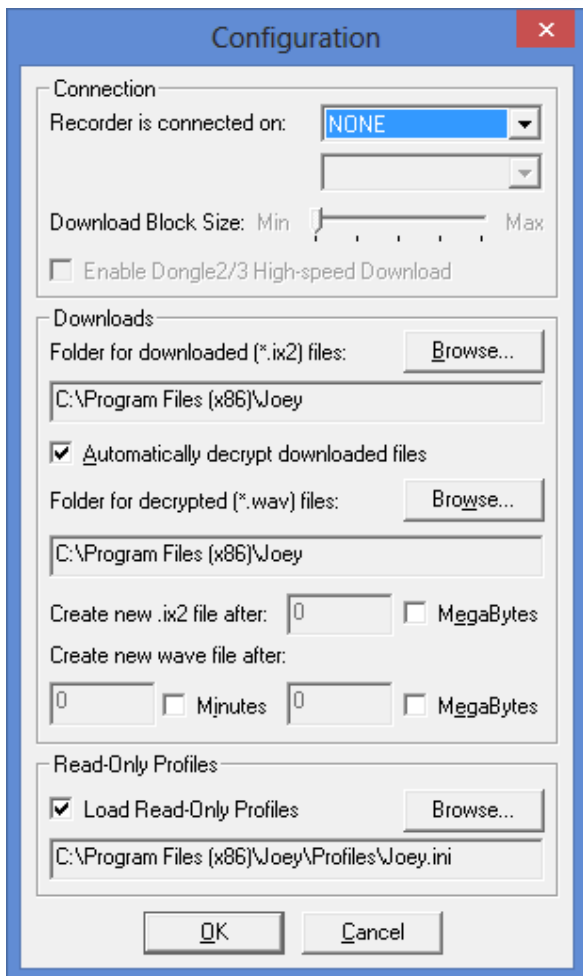
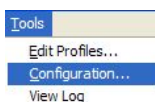


Buttons and menu items that are not currently available are greyed out until such time that they can be used.



## 4.2 Configuring Joey Software

The configuration window is accessed from the tools menu and is displayed automatically the first time the **Joey Software** program is run.



*Figure 13, Configuration Window*

Click on the drop-down list button to select the connection type (Dongle 1) used to connect to the recorder.

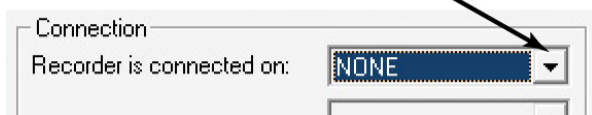


Figure 14, Selecting the Connection type

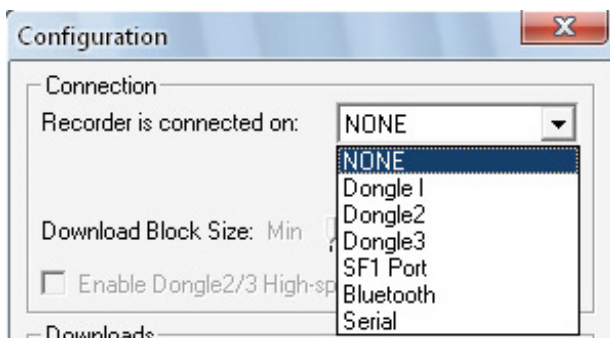



Figure 15, Connection type List

The  button is clicked to save the settings.

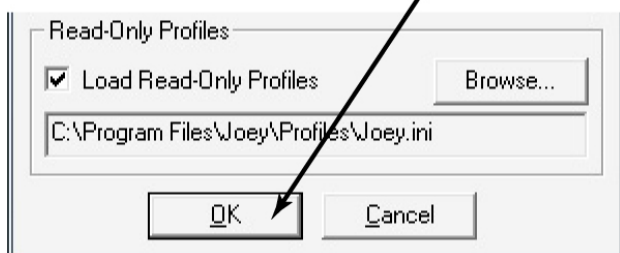


Figure 16, Saving the Configuration Settings

The Configuration options are detailed in [Table 1](#).

The options selected are based on the USB Downloader used and the connected recorder, the location and options associated with the downloaded recordings and the profile for the connected recorder.

Item		Description
Connection	Recorder is Connected On	None, Dongle 1, Dongle2, Dongle 3, SF1 port, Bluetooth, Serial, or C4
	Connection Speed / Recorder Port	If a Dongle is selected, then this lists the available communication speeds. If Serial Port or SF1 is selected, then this lists available ports on computer. Fast provides the highest speed and should be used in most cases.
	Download Block Size	Used in conjunction with the USB Downloader, it sets the number of packets between acknowledgments. Setting to Max should improve the download speed on most computers.
	Enable Dongle2/3 High Speed Download	Allows the user to enable high speed (up to 90MB per minute) downloads using the Dongle3 USB downloader.
Downloads	Browse	Select *.IX2 folder
	*.IX2 Folder	Folder to store downloaded *.IX2 files
	Automatically decrypt	Automatically decrypt to *.WAV after downloading the *.IX2 file.
	Browse	Select *.WAV folder
	*.WAV Folder	Folder to store converted *.WAV files
	Create new IX2 files after	Allows download to be split into multiple files based on size, click on Megabytes to select size
	Create new wave files after	Allows download to be split into multiple files base on time/size, click on Minutes to select time / click on Megabytes to select size
Read-Only Profiles	Load Read-Only Profiles	Allow Read-Only profiles to be loaded to profile list of Joey Software, <a href="#">Section 4.4.1</a>
	Browse	Select Read-Only Profile file
	File and Folder	Read-Only Profile File currently loaded
OK		Accept configuration changes
Cancel		Cancel the modification

Table 1, Configuration Items

### 4.2.1 Configuration For Dongle1

When a **Dongle1** USB Downloader is used, choose the “Dongle1” from the drop-down list next to “Recorder is connected on:” in the Configuration window also select “Fast” from the drop-down list next to “Connection Speed”. Adjust the speed setting if communication issues arise.

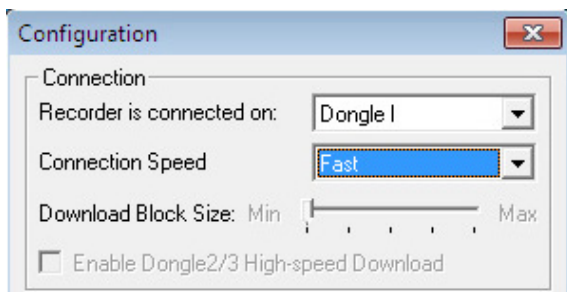


Figure 17, Dongle1 Configuration Window

### 4.2.2 Configuration for Dongle3

**ALL FULL FEATURED JOEY UNITS** (with Keyfob Remote) are capable of high-speed download with the optional **Dongle3** USB downloader.

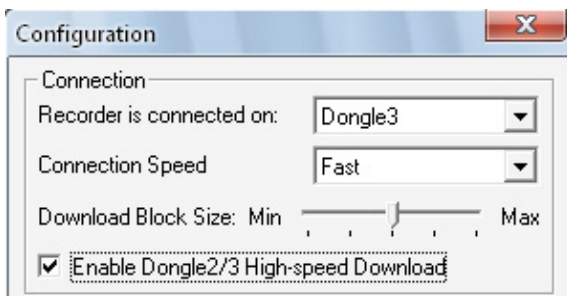


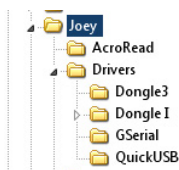
Figure 18, Dongle3 Configuration Window

When a **Dongle3** is used, choose “Dongle3” from the drop-down list” in the Configuration window. Select “Fast” for “Connection Speed” and adjust the “Download Block Size:” to “max”.

## If the download speed is erratic:

First, reduce the Download Block size. If no improvement, disable the high-speed download. Lastly, reduce the connection speed.

The driver for the Dongle3 USB downloader can be located in the driver's sub-directory in the Joey directory under program files.

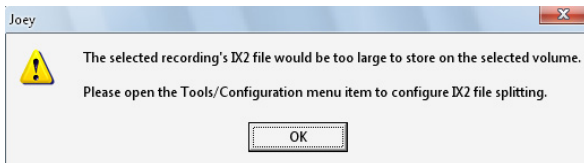


**NOTE:** ALL "Joey LITE" models as well as a J1 and J2 model have NO high-speed download available and NO upgrade path to the full featured Joey hardware which include the keyfob remote.

### 4.2.3 File Size Limitations and FAT32

The FAT32 file system has a 4 Gigabyte (4GB) file size limitation, though most recent computers use the NTFS file system (Windows™ 10 and backwards through some XP systems) and therefore do not have this limitation.

When **Joey Software** has been installed on a computer that has the 4 GB file size limitation, or writes to a location with that limitation, the software opens a warning window indicating that the File system is FAT32 and files larger than 4 GB are not allowed.



*Figure 19, File Size warning*

To overcome this limitation, **Joey Software** provides an option for breaking the file into acceptable sizes. The settings tell the software to begin a new file after a pre-set number of bytes to a maximum of 2047 Megabytes (MB). With this setting for example, a 4GB recording is split into two 2047 Megabyte files.

**Joey Software** also has an option of setting a time limitation on the wave file created before a new file begins, this can be set from 1 to

6000 minutes (0 is deemed as NOT Selected). Note: A Wave file (.WAV) does not exceed 2048 Megabytes in either setting of size or time.



A wave file does not exceed 2048MegaBytes in either setting of size or time.

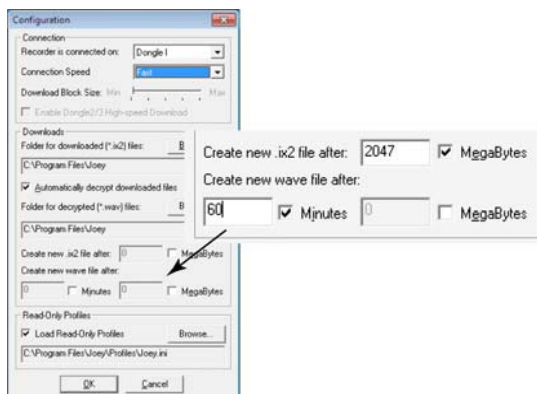


Figure 20, Settings to create files size and time

## 4.2.4 Connection Status

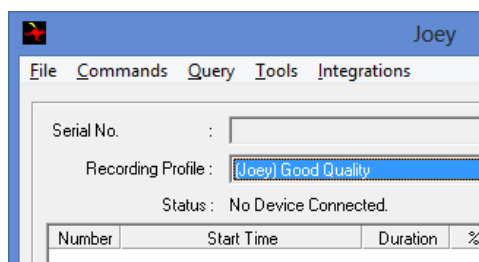


Figure 21, Connection Status

In the main **Joey Software** window, details of the current connection with the recorder (Status) are shown. The message changes depending on the connection with the computer.

Status (Dongle 1 Selected)	Message
No download cable connected	No Device Connected
Recorder not connected	Looking for Recorder on Dongle 1 or Dongle3
Recorder connected	Connected to Recorder

Recorder under timer control	Recorder is in timer mode
Recorder is password protected	Unit xxxxx is password protected

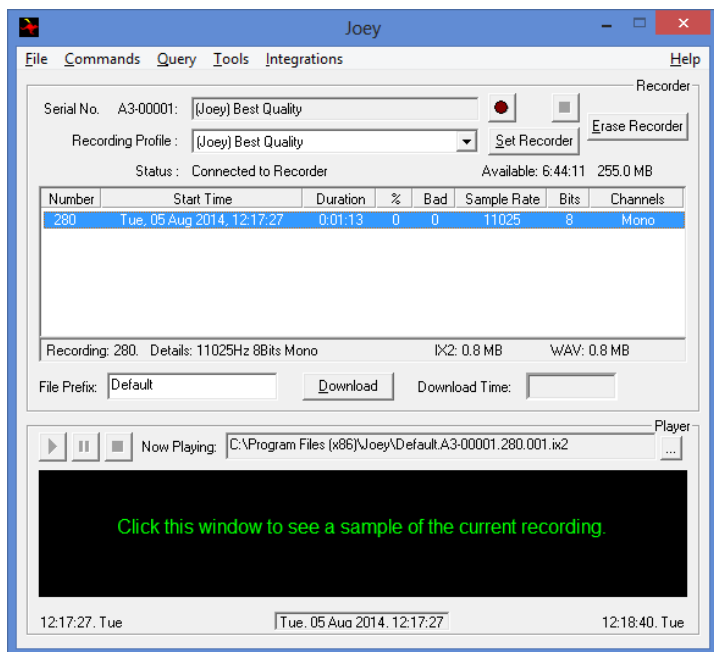
*Table 2, USB Downloader Connection Messages*

Once a recorder is located, the software automatically tries to interrogate the unit for its current profile and provides a listing of audio recordings currently residing in the recorder's memory.

## 4.2.5 Updated Display

When a recorder is first connected to the computer and the **Joey Software** program is open, the recorder is interrogated, and the program's main window is updated to display the latest information from the device.

This results in the recording list being shown and the profile changing to indicate the recorder's current settings. If a profile is not available for the recorder's current settings, the parameters of the No Match profile (see [Section 4.4.3](#)) are changed to reflect the settings retrieved from the recorder.



*Figure 22, Updated Main Window*

## 4.2.6 Communications Log

The Communications Log is a useful tool and can be accessed from the **Tools** menu. Click on “View Log” and the Log window opens. The Communications Log is used to view the communications from the computer to the recorder and responses from the recorder to the computer.

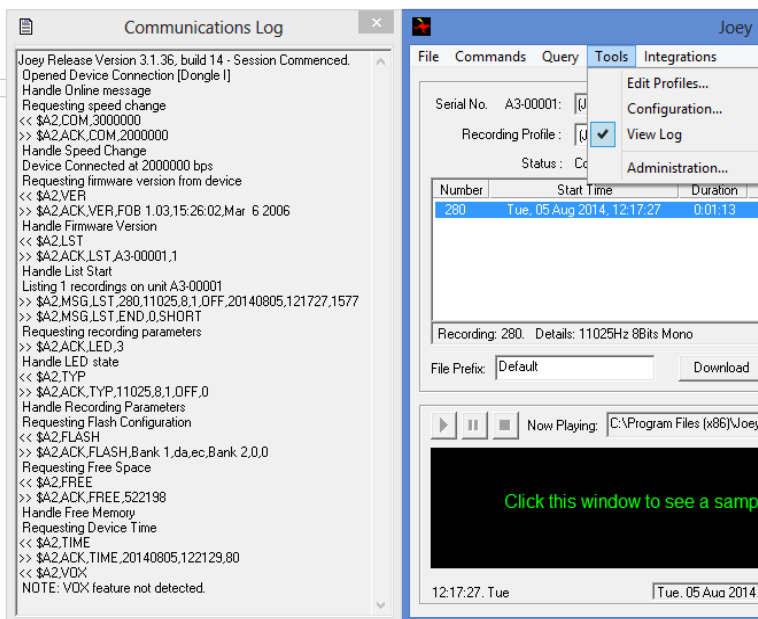


Figure 23, Communications Log

The Log may show dots ( ..... ) indicating retries (during downloads.) If these occur frequently, the Connection Speed setting or the block size may need to be reduced, particularly when using the **Dongle3** USB downloader. [See Section 4.2.2](#)


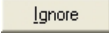
Retries may also occur with USB ports on some laptops and low-profile Computers, the use of an externally powered USB Hub is advised in these cases.

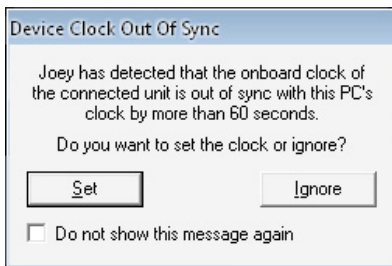


Right clicking on the Communications log window allows an option to “Open Log” in Notepad.



## 4.3 Time and Date

When a device is connected to **Joey Software** and the on-board real time clock is out by more than 60 seconds against the clock of the PC, the “Device Clock Out of Sync” window opens, allowing the user to  or  the clock settings.

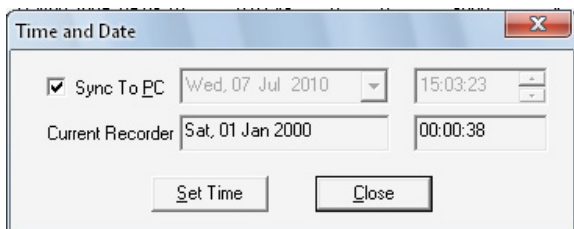


*Figure 24, Clock out of Sync window*

When the Set Button is clicked, the Time & Date window opens.

The operator can choose to synchronise the time to the computer or set an alternative time by unchecking the “Sync to PC” checkbox. To disable this window from appearing, select the checkbox for the **Do not show this message again** field.

It is expected that the time drifts at a maximum rate of up to five seconds per day.

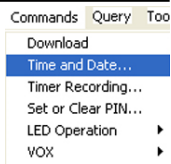


*Figure 25, Set Time and Date*



*Prior to using the recorder, ensure it has the correct date and time stored in its internal real time clock.*

The Time and Date can be entered manually through the “Time and Date” option in the Commands menu.



## 4.4 Profiles

A profile is basically the setup of the audio parameters of the recorder. The profile tells the recorder at what sampling rate, how many channels, and storage method to use when recording the audio files. Once a profile is loaded into a recorder it is used every time it needs to make a recording until a new profile is loaded into the device.

There are three types of profiles that the **Joey Software** program can handle,

- Read-Only
- User Saved
- No Match

Read-Only profiles are profiles that can be loaded into **Joey Software** from files provided with the software (Joey.ini). This allows system administrators to load the same profile list for every installation of the program they run so that user errors can be minimized. These profiles cannot be *deleted* from the list unless the entire file is deselected. See [Section 4.4.1 Loading Read-Only Profiles](#).

User saved profiles are profiles created and saved within the program itself. A user may take a Read-Only profile, adjust a parameter or two and then save as a new profile. If no profiles are loaded to select from, a user may create a new profile, and save for future use. User Profiles are grouped according to device type, see [Section 4.4.2 Editing Profiles](#).

No Match profiles are profiles contained on the recording device that do not correlate to any in the current profile list. This may occur if a device is setup on one PC and then taken and used on another PC. See [Section 4.4.3 No Match Profiles](#).

### 4.4.1 Loading Read-Only Profiles

A read-only profile file may be loaded into **Joey Software** from the configuration window.

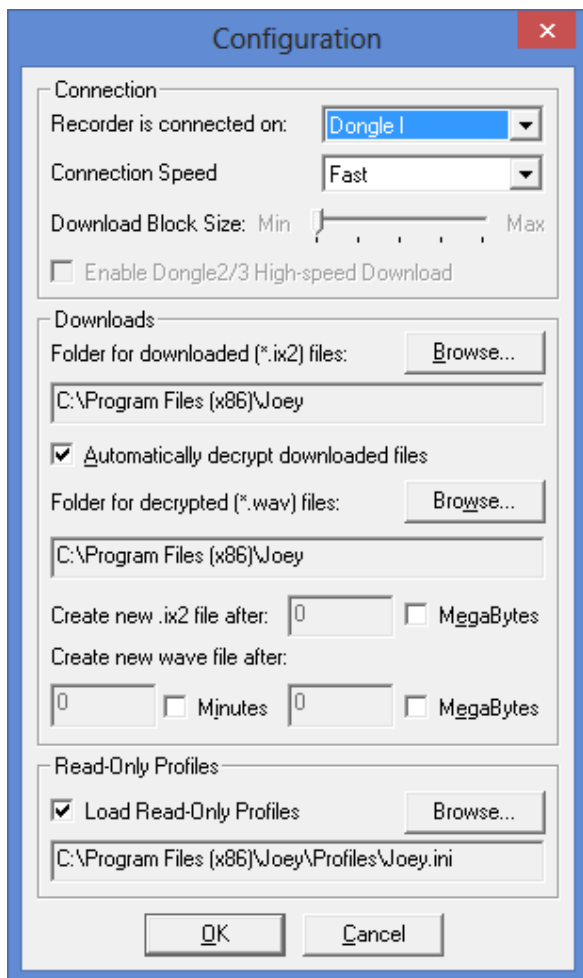
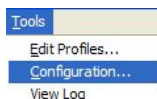

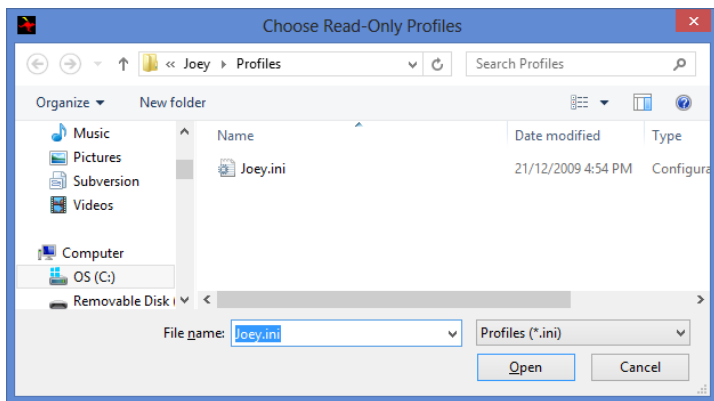
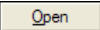


Figure 26, Configuration Window

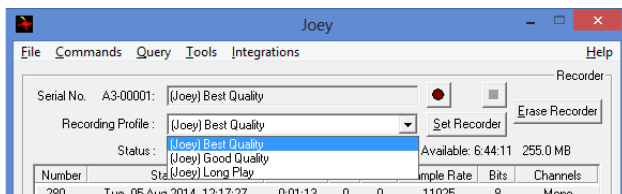
To load a profile file, select the “Load Read-Only Profiles” tick box and then click on the  button to choose a file. This opens the “Choose Read Only Profiles” window



*Figure 27, Load Profiles Window*

Choose the appropriate profile file for your recorder (the Joey devices have only one profile file) and click the  button. By default, the “Read Only” profiles are installed in the Profiles directory of the **Joey Software**.

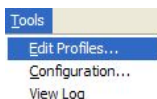
When the profile is loaded the list of options is displayed by clicking on the list button on the right-hand side of the “Recording Profile” caption. This list is updated with the new Read-Only profiles and any User Saved profiles already in the system.



*Figure 28, Profile List*

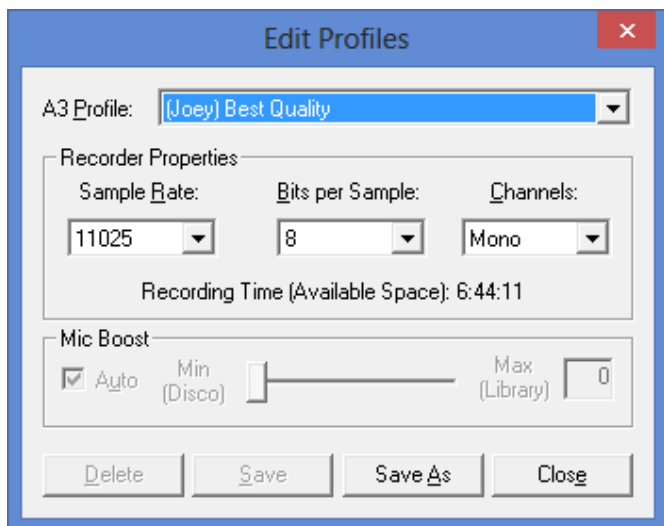
## 4.4.2 Edit Profiles

An existing profile may be edited, or a new profile created through the **Tools** menu in the main window.



When “Read Only Profiles” are loaded, clicking on “Edit Profiles” results in the following window being displayed.

This can be done with or without a Joey device connected.

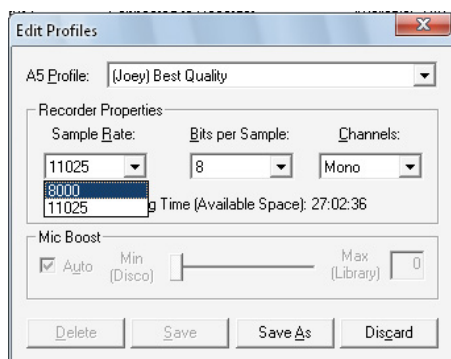


*Figure 29, Edit Profiles Window*



To modify a profile, change the items as desired.

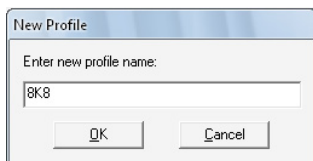
Item		Description
J2/A5/A3 Profile		The series device connected
Recorder Properties	Sample Rate	Higher the number, better the quality
	Bits / Sample	Higher the number, better the quality
	Channels	Only Mono microphone is available
Microphone Boost	Auto	Variable microphone gain based on input
	Min (Disco)	N/A
	Max (Library)	N/A
Delete		Delete the current profile
Save As		Save the current profile to a new name
Discard		Discards the current changes made to profile and closes profile window
Close		Closes edit profile window

*Table 3, Modify Profile Items*



*Figure 30, Modify Profile Change Sample Rate*

The modified profile can be saved using  to a new profile name or all changes can be discarded by using the  button. The available recording time is updated whenever the profile is changed.



*Figure 31, Saving the new profile*

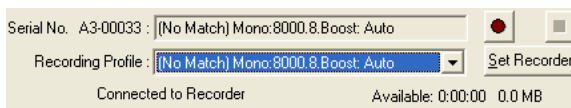
When NO device is connected, and “Read Only Profiles” are loaded: All user profiles and read only profiles are visible when the “Recording Profile” drop down list is invoked. Any of these profiles can be edited and saved as a new “User Profile”.

If a non- “Read Only” profile is edited, it is saved and associated with the device type of the original profile (Joey).

When a device is connected and “Read Only” profiles are loaded: All user profiles and Read only profiles for that device type (Joey) are shown. Any new profile created is only associated with that type of device.

### 4.4.3 No Match Profiles

These occur when a profile contained on the recording device does not compare to any profiles currently loaded in the **Joey Software** program.



*Figure 32, No Match Profile*

If the profile on the device is one that could be used in future, saving it to the PC for later use is recommended. This allows the profile to be selected from the profile list and used to setup other recording devices. See [Section 4.4.2 Editing Profiles](#).

### 4.4.4 Changing the Profile

The recorder's profile may be changed by selecting a pre-set or previously stored profile from the drop-down list and pressing

[Set Recorder](#)



Figure 33, Profile Selection



Alternatively, users can create their own profile. See [Section 4.4.2](#).

## 4.5 VOX and LED Operation

The VOX and LED operations are not supported in the **Joey** devices, so these options have no affect.

## 4.6 Making a Recording

After configuring the recorder, ensure there is adequate record time available to make a recording Available: 01:09:32 254.7 MB.

To initiate a recording from the software, click the record icon  and click the stop icon  to stop the recording.

A recording based on the current profile is created. Ensure a microphone is connected, otherwise a blank recording is made.

When the stop button is clicked, the recording is displayed in the window, which can now be downloaded. See [Section 4.8 Downloading the Recorder](#).

Alternatively, disconnect the recorder from the computer and use it in stand-alone mode.



*Recordings made while attached to the computer are of a quality slightly lower than similar recordings made with a battery in stand-alone mode. Quality acceptance testing should only be performed using stand-alone mode with a battery.*



## 4.7 Recording List

The recording list is automatically updated to display the recordings currently stored within the recorder's internal memory when a recorder is connected to the computer.

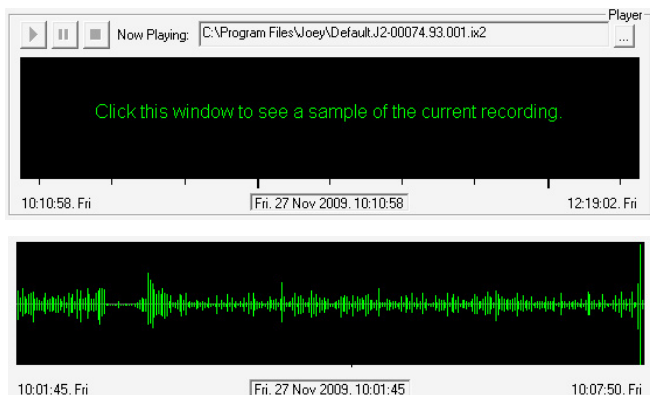
Number	Start Time	Duration	%	Bad	Sample Rate	Bits	Channels
89	Fri, 27 Nov 2009, 09:50:48	0:04:42	0	0	8000	4	Mono
90	Fri, 27 Nov 2009, 09:58:15	0:02:48	0	0	8000	4	Mono
91	Fri, 27 Nov 2009, 10:01:11	0:00:16	0	0	8000	4	Mono
92	Fri, 27 Nov 2009, 10:01:45	0:06:05	0	0	8000	4	Mono
93	Fri, 27 Nov 2009, 10:10:58	2:08:05	0	0	8000	4	Mono

*Figure 34, Device Recording List*

Field	Description
Number	Unique Recording number
Start Time	Start Time and Date for recording
Duration	Length of recording hh:mm:ss
%	Percentage already downloaded
Bad	Number of bad blocks found
Sample Rate	Sample rate of the recording in Hz
Bits	Number of bits used for each sample
Channels	Number of audio channels (mono or stereo)

*Table 4, Description of Device Recording List*

A sample of the currently selected recording can be displayed by clicking on the text in the audio player window. Approximately 300 points of the wave are downloaded for a quick visual pre-scan. This sample is not saved.



*Figure 35, View the Recording Sample after download*

## 4.8 Downloading the Recorder

Enter a file prefix  if desired, in the field provided. The “file prefix” is used in the name of the recording that is being downloaded and is appended to the file name, for example: **file\_prefix.unit\_id.recording\_number.segment\_number.IX2**.

If the software is configured to convert the \*.IX2 file to \*.WAV automatically (See [Section 4.2](#)), the audio is stored in wave format with the file name:

**file\_prefix.unit\_id.recording\_number.segment\_number.wav\_split\_number.WAV**.

The configuration window is used to change the location where downloaded recordings are stored and enables the \*.IX2 or \*.WAV file to be split to multiple files starting at **\*\*001.IX2** and **\*p001.00.WAV** respectively. See [Section 4.2](#).

Using the mouse, move the cursor over the files, click to select the recording to be downloaded.

Number	Start Time	Duration	%	Bad	Sample Rate	Bits	Channels
89	Fri, 27 Nov 2009, 09:50:48	0:04:42	0	0	8000	4	Mono
90	Fri, 27 Nov 2009, 09:58:15	0:02:48	0	0	8000	4	Mono
91	Fri, 27 Nov 2009, 10:01:11	0:00:16	0	0	8000	4	Mono
92	Fri, 27 Nov 2009, 10:01:45	0:06:05	100	0	8000	4	Mono
93	Fri, 27 Nov 2009, 10:10:58	2:08:05	0	0	8000	4	Mono

*Figure 36, Selecting a Recording to Download*

As recordings are selected and deselected, the disk space required by the **\*.IX2** and **\*.WAV** (optional) files is automatically updated.

Recording: 93. Details: 8000Hz 4Bits Mono	IX2: 30.3 MB	WAV: 58.5 MB
---	--------------	--------------

*Figure 37, Storage Space Required for Download*


Use the **<Ctrl>** or **<Shift>** keys to select multiple recordings.

Commence the download by pressing the  button. The download timer indicates the estimated time remaining to download all the selected recordings.

Download Time:

The recording list updates the percentage of each file as it is downloaded.

## 4.9 Erase Recorder

When the stored recordings are no longer required, they can be erased by clicking on the  button. The **Joey Software** checks to see if the recordings have been previously downloaded prior to erasing and reconfirms the intention.

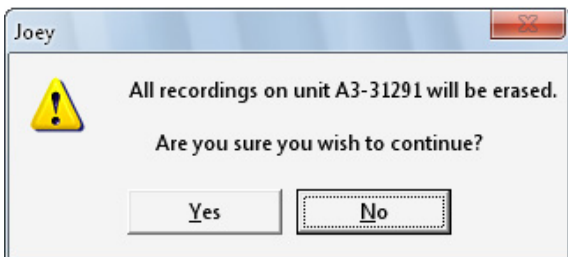


Figure 38, Erase Warning



Once erased, all recordings on the recorder are **completely** removed and **cannot** be recovered.



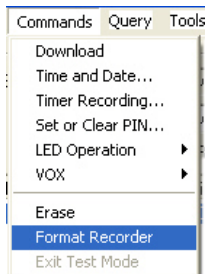
*Erase can only be performed on the whole device; there is no way to erase individual recordings.*

## 4.10 Format Recorder

The Format command is only available from the main menu and is used to verify that the recorder's memory is error free, by locating and accounting for bad memory blocks, see Bad Blocks in [Section 4.11](#).



***This command must be used with caution. Formatting can take several hours or even days and is only required when the device displays an excessive number of bad blocks during downloads.***



The format Command is accessed in the **Commands** menu.



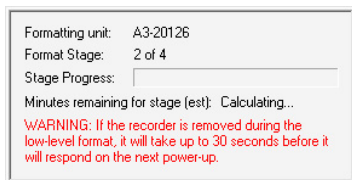
*Figure 39, Low Level Format Warning*

As all recordings will be lost, ensure the files are not required. **Joey Software** provides one last opportunity to cancel the operation and download recordings before the format proceeds.



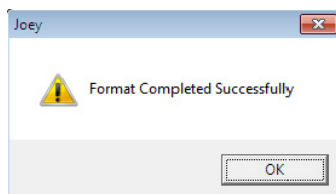
*Figure 40, Not All Recordings Downloaded Warning*

Formatting proceeds in a four-part process which is displayed in the formatting window. **Remember, this process takes an extended amount of time.**



*Figure 41, Formatting Progress*

When the format is completed, a pop-up window indicates that the format has finished.

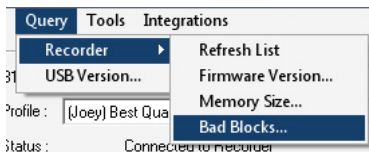


*Figure 42, Formatting Completed*

## 4.11 Bad Blocks

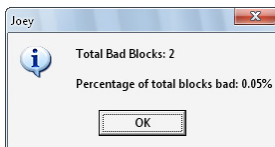
A bad block is any area of memory inside the Recorder that is not retaining the value sent to it during a format. These blocks are marked as “bad” by the device to prevent corruption of the recorded data.

Use the Query menu to view the number of bad blocks discovered during the format.



*Figure 43, Checking the percentage of Bad Blocks*

With **Joey** devices it is not unusual for up to 2% bad blocks to be present. If you experience more than this, contact your product representative. The recorder can handle any number of bad blocks,



however too many bad blocks would impact on recording times and possibly file integrity. For a more detailed look at how file integrity works on the JOEY range of recorders see [Appendix B](#).

Formatting the recorder locates and accounts for bad memory blocks. After a format has been performed the list of bad blocks is updated. See [Section 4.11](#).

## 4.12 Bad Blocks and Checksum Errors

When a file is downloaded, **Joey Software** provides a history in the communications log.

In the example below, a “Bad Block” is found and noted here:

```
BAD BLOCK ERROR: Unit: A3-20062 FILE: 00023 INDEX:
460159
```

In the download report, one Checksum Error and one Irregular Block are entered.

```
Unit ID: A3-20062
Audio Image Number: 23
Recording Start Time: 2014/04/08 13:58:48
Recording Length: 6:45:08
Segment Start Time: 2014/04/08 13:58:48
Segment Length: 6:45:08
Sample Rate: Hz
Bits Per Sample: 8
Channels: 1
Samples Per Channel: 267992576
Unit ID Errors: 0
File Number Errors: 0
Block Order Errors: 0
Timestamp Errors: 0
Block Checksum Errors: 1
Total Irregular Blocks: 1
```

Further, in the recording window the bad blocks are shown in the “Bad” column.

Status :		Connected to Recorder			Available: 0:00:00 0.0 MB		
Number	Start Time	Duration	%	Bad	Sample Rate	Bits	Channels
22	Mon, 04 Aug 2014, 08:24:02	0:00:28	0	0	11025	8	Mono
23	Mon, 04 Aug 2014, 13:58:48	6:45:08	100	1	11025	8	Mono

0 Recordings Selected      IX2: 0.0 MB      WAV: 0.0 MB

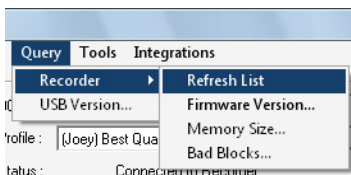
*Figure 44, Bad Block in download*

When there are several “Checksum” errors without “BAD BLOCK ERROR” being reported, then there may be a less than ideal link between the recorder and the computer. Adjusting the download settings may fix this problem.

Whenever a “BAD BLOCK” is located during a download, it is added to the bad block table during the next erase.

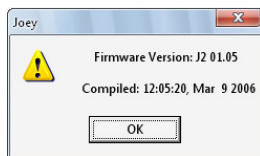
## 4.13 Recorder Refresh List

Recorder refresh is used to refresh the file listing in the **Joey Software** window. Click on the “Query” menu item select the “Recorder” option, then the “Refresh List” from the Query-recorder option list.



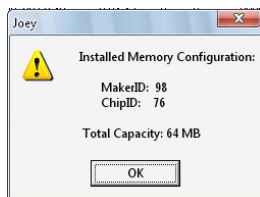
## 4.14 Recorder Firmware Version

To establish the version of firmware in the recorder, click on the “Query” menu item select the “Firmware Version” option.



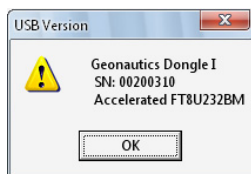
## 4.15 Recorder Memory Size

To view the amount of memory available in the recorder, click on the “Query” menu item select the “Memory Size” option.






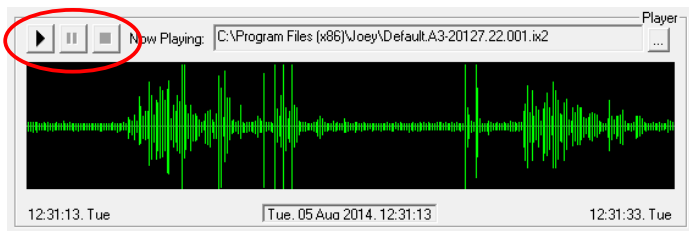
## 4.16 USB Version

Provides firmware version and information about the USB Downloader cable. Click on the “Query” menu item select the “USB Version” option.



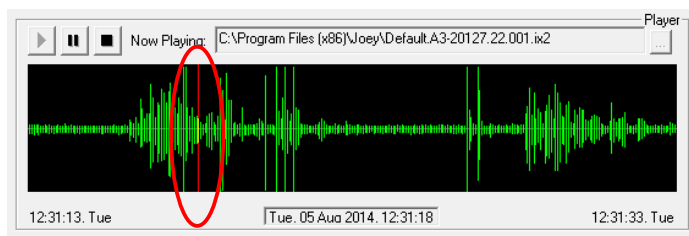
## 4.17 Playback

After downloading, the last recording is automatically selected in the audio player and can be played back using the play , pause  and stop  buttons.




*Figure 45, Recording Playback*

Alternatively, position the current position of the playback cursor (circled here) by clicking into the audio sample window and hit the play button to play from that point.



*Figure 46, Playback Beginning Selection*

To select a previously downloaded file, click on the corresponding recording in the list or use the  button to browse the computer's disk for \*.IM2, \*.IX2 and \*.WAV files.

When playing a JOEY IM2 or IX2 file, the time and date of the current cursor position is updated continuously. This feature is unavailable when replaying WAV files.



## 4.18 PIN Functions

The PIN number secures the recorder so that it cannot be used with the **Joey Software** program until the correct number is entered. The PIN does not affect stand-alone operation of the recorder.

### 4.18.1 Setting and Clearing the PIN

The Set PIN window is displayed via the Commands menu within the main window.

If a PIN is not currently set, then the following window is displayed:

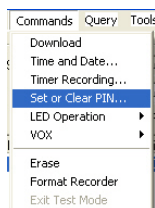
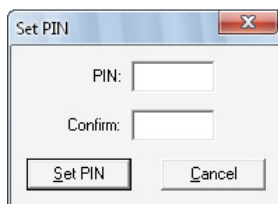



Figure 47, Setting the PIN

Enter and confirm the PIN and press the  button.

**Note: The PIN CANNOT be set to 0000.**

If a PIN is already set on the unit, the following window is displayed and may be used to change or clear the existing PIN.



Figure 48, Changing or Clearing the PIN

**Note:** Once a PIN has been set within the **Joey** device, it can only be **CHANGED** or **RESET** by first entering the original PIN. If you have forgotten your PIN, it can only be reset by the manufacturer.

Ensure you keep a record of your PIN in a safe place.

### 4.18.2 Entering the PIN

If a PIN is currently set on the recorder, the following window is displayed every time the recorder is connected to the **Joey Software** and no further action can be taken until a correct PIN has been entered.



*Figure 49, PIN Entry*

Once the PIN is entered the program continues as normal.

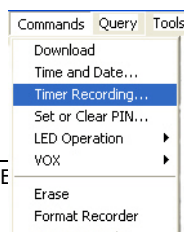
## 4.19 Timer Record Mode

The recorder can start and stopping recording automatically using its timer record mode.

**Note:** Timer record mode places addition current requirements on the recorder's batteries.

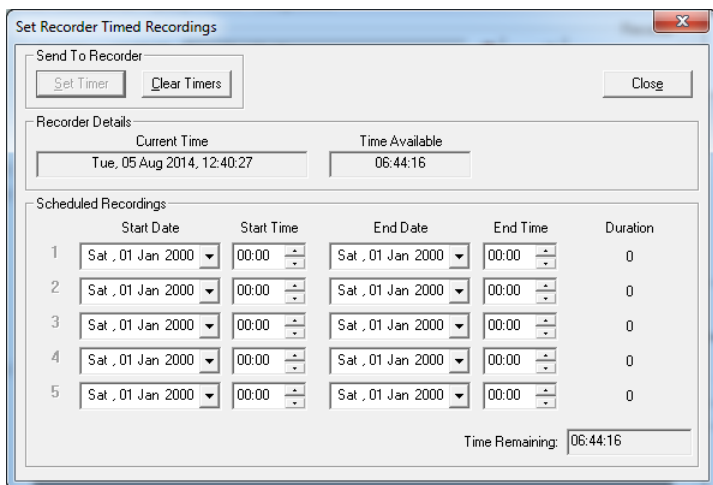
### 4.19.1 Setting Timer Record Mode

The Timer Recording window is displayed using the Commands menu within the main window.



The **Joey** devices can have up to 5 timer events.

The operator has the option to pre-define times and dates for the recorder to record automatically.

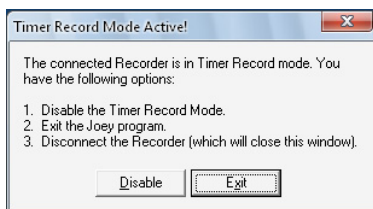


*Figure 50, Set Recorder Timed Recordings*

If times overlap or periods are longer than available memory on a device, a warning message is displayed.

#### 4.19.2 Disabling Timer Record Mode

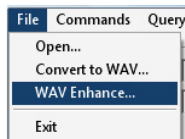
If the recorder has any valid start times which are yet to expire, the following window is displayed when the recording device is connected to the **Joey Software**.



*Figure 51, Active Timer Mode*

Disable the timer record mode or wait for any start times to expire before attempting to proceed.

## 4.20 Post Process Filtering



This function is not available for 8-bit WAV files downloaded from the **Joey** devices.

## 4.21 Converting \*.IX2/IM2 files to \*.WAV

The **Joey Software** program allows the operator to convert previously downloaded \*.IX2 or \*.IM2 files into \*.WAV files.

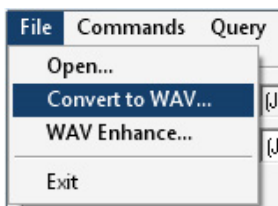
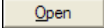


Figure 52, Convert to Wav menu option

Once the file has been selected, click the  button. You are asked the location and name of the file to save.

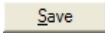
Once entered, click the  button.

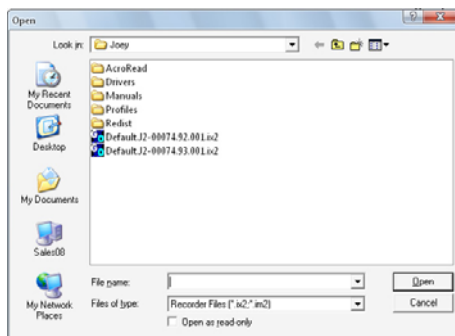


Figure 53, Save As dialog for File Conversion

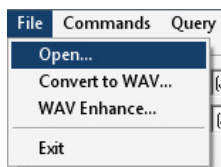
The size of the IX2 or IM2 file and type of computer determines processing time, the faster the computer the shorter the time to process. Once processed, the file is ready for listening.

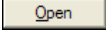
## 4.22 Playing Native \*.IX2 and \*.IM2 files

The **Joey Software** provides an option to play previously downloaded \*.IX2 files and \*.IM2 files.



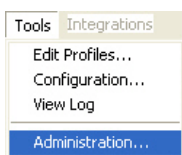
*Figure 54, Open an IX2 File*



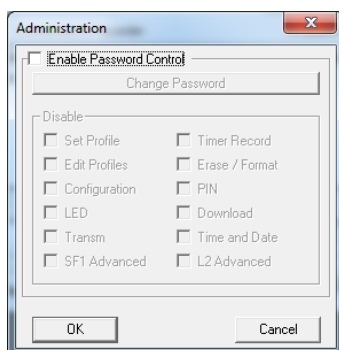
Once a file has been selected, click the  button.

## 4.23 Joey Software Administration

The **Joey Software** program allows the administrator to hide certain parts of the program from operators. These items are grayed out (disabled), so an operator cannot inadvertently select and alter them.

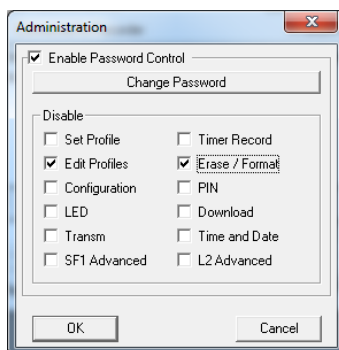


Once selected, the following window is displayed.



*Figure 55, Initial security dialog*

To implement security control over certain elements of the **Joey Software** program, select the Enable Password Control option in the dialog, then select any items you would like to disable from the operator. An example is shown below:



*Figure 56, Selecting actions to mask out*

Once your selections have been made, click the **Change Password** button. The dialog to the right is displayed, asking you to enter and confirm your password.

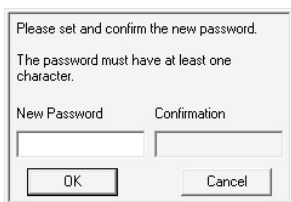


Figure 57, Setting a password

When a password has been set, the following dialog is displayed to re-enter the Security section of **Joey Software**.



Figure 58, Asking for password

## 4.24 Joey Software Integrations

### 4.24.1 Joey 2 Transmitter

Within the **Joey Software** integrations there is an option to change the transmitter settings of the **Joey 2**

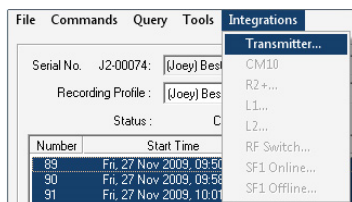


Figure 59, Joey2 Transmitter Integration

Information on the transmitter settings can be found in the **Joey2** User Guide. These are in the HELP menu - see [Section 4.25](#).

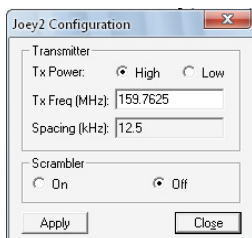


Figure 60, Joey 2 Configuration



## 4.24.2 Full Featured Joey (non-LITE versions) RF Switch Keyfob Configuration

The RF Switch integration option opens the Joey keyfob configuration window.

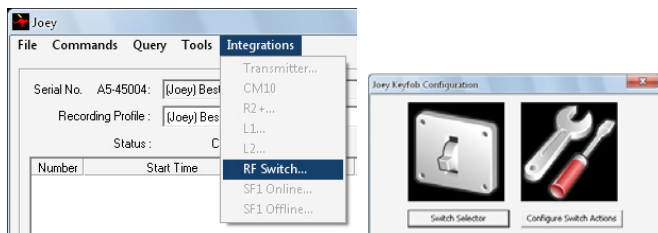


Figure 61, JoeyW Keyfob Configuration

Information on the Keyfob configuration can be found in the **Joey** Hardware User Guides. This is in the HELP menu - see [Section 4.25](#).

## 4.25 Joey Hardware User Guides

The Hardware User Guides for the range of **Joey** products is available from the Help menu in the **Joey Software**

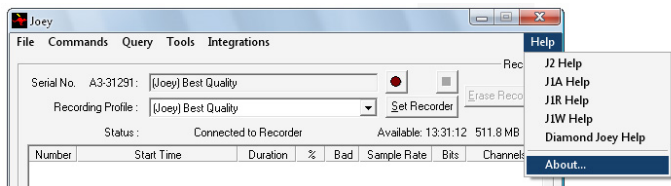


Figure 62, Joey Hardware User Guides

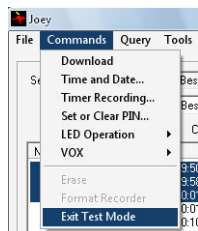
## 4.26 Exit Test Mode

Test mode is used for factory testing where the main file numbering is not affected when recordings are made. If the device is in test mode a warning screen appears.

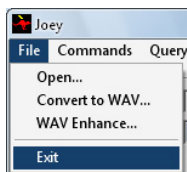


Figure 63, TEST MODE warning

To exit test mode, on the Commands menu, select “Exit Test Mode”. The recorder must be erased before this can be achieved.



## 4.27 Exit the Joey Software



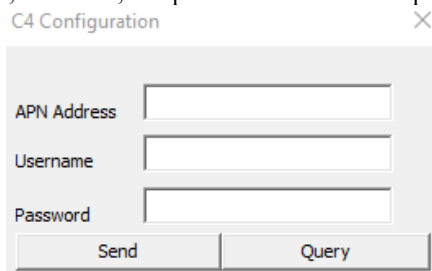
To exit the Joey Software, on the File menu, select Exit.

## 4.28 C4 Configuration

The C4 module is the CELL-JOEY LTE cellular transceiver produced by Nautics Group as the C4 "Wallaby".

Configuring the C4 module's APN can be done through the C4 configuration menu located under configuration menu

Here the APN, username, and password can be set or queried



## APPENDIX A USB DOWNLOADER DRIVER GUIDE

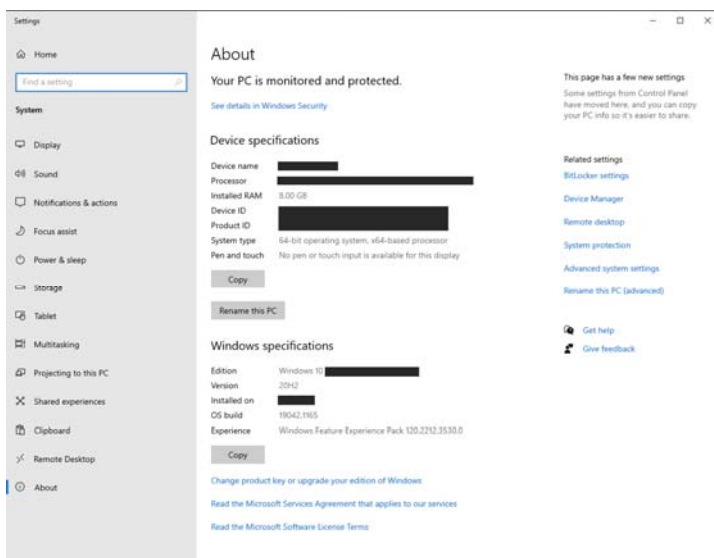
### A.1 Windows 10 and Windows 8 Dongle Device Driver Installation

#### WINDOWS 10

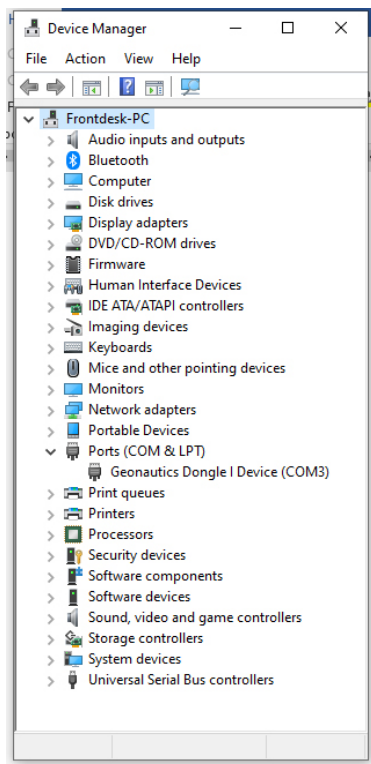
The USB Downloader Cable dongle driver should automatically install during the software installation process. To verify this, from the Windows desktop load the **System Properties** by holding down the **Windows** (⊞) key and pressing the **Pause** key.

Alternatively, right click on the **This PC** line in Windows 10 File Explorer and select **Properties** from the menu that appears.

The System Properties window should now be displayed.



Select **DEVICE MANAGER** from the list on the right of the screen.



Expand the line item **PORTS (COM & LPT)** by clicking on the arrow to the left of the selection.

You should see the USB Downloader Cable dongle listed as well as it's assigned COM Port number.

If you do not see the dongle listed here, you will have to install the driver manually.

Follow the Windows 8 instructions below for manually installing the driver. Begin with the instructions after DEVICE MANAGER is open.

## WINDOWS 8

Windows 8 may not automatically ask for a driver when either dongle 1 or 3 is plugged into the computer. To manually install a Dongle driver, connect the appropriate dongle and then select **Search**.

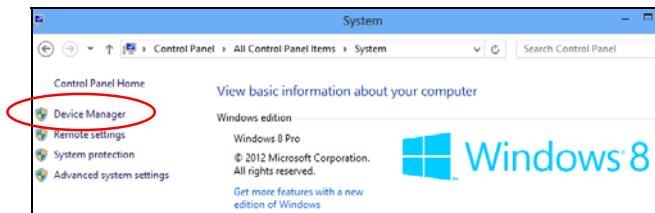
Select **Control Panel**.



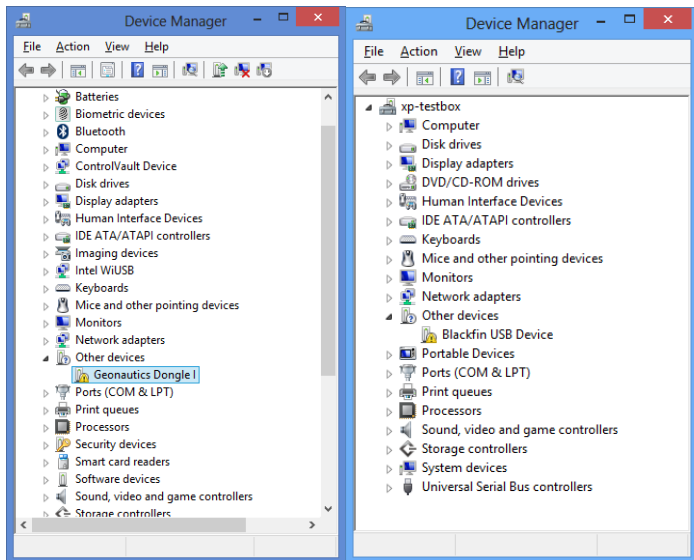
Then select the **System** icon from within the control panel.



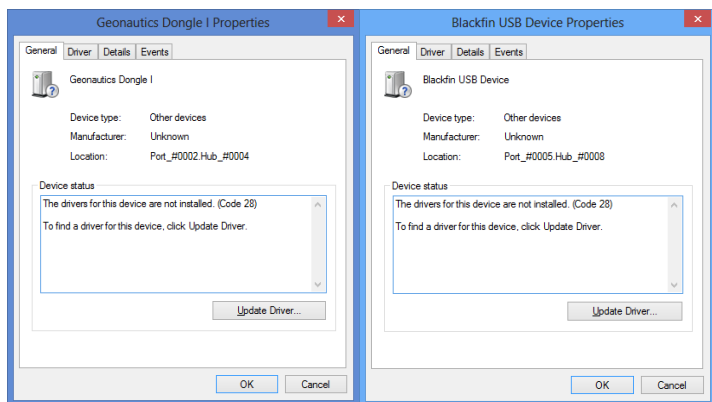
Select **Device Manager**:



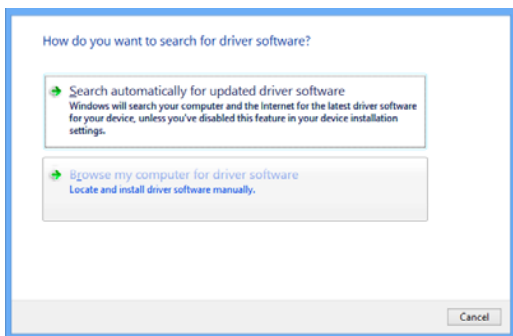
A Dongle1 device is displayed under “Other Devices” as a “Nautics Group Dongle I”, while a Dongle3 device is displayed as a Blackfin USB Device, as shown in the image below:



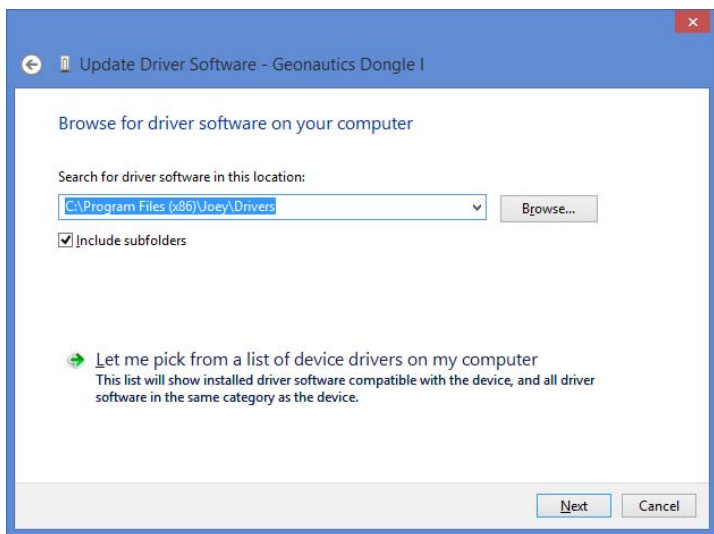
Double click the device for which you need to install a driver.



## Select **Update Driver**.



## Select **Browse my computer for driver software**.



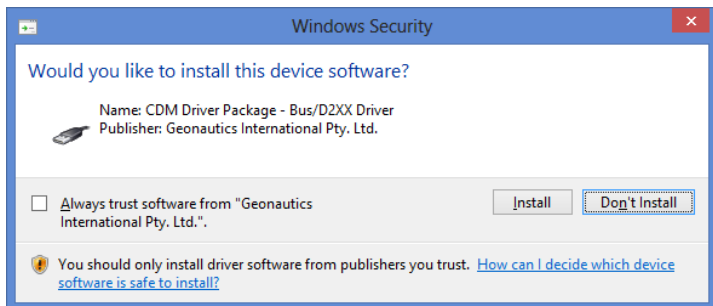
Browse to the location of the USB Download Drivers.

The default install location is:

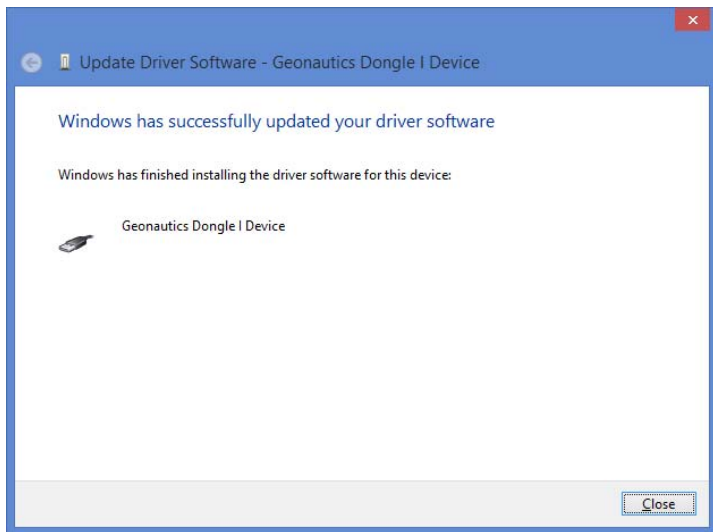
**C:\Program Files\Joey\Drivers** on 32-bit systems, or  
**C:\Program Files(x86)\Joey\Drivers** for 64-bit systems.

Make sure to select **Include subfolders**.

Select **Next**.




Windows installs the driver and displays a completion message.

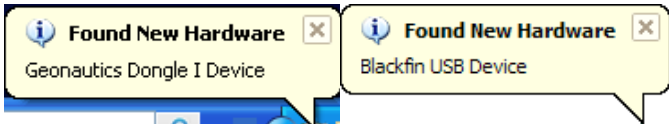




## A.2 Windows XP & Windows 7 Dongle Device Driver Installation

Ensure the Joey Software installation media is in the computer. (If you have previously installed Joey and the auto-install begins press  when you are warned it is already installed.)

When the supplied USB cable is plugged into your computer's USB port Windows displays a "Found New Hardware" popup.




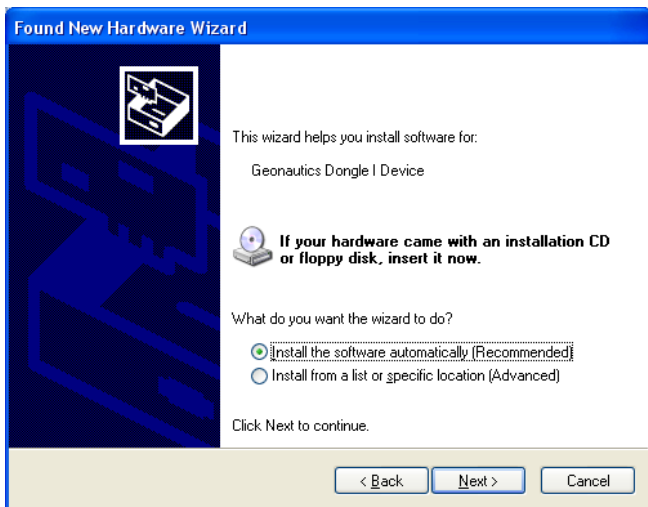
*Figure 64, Windows Found New Hardware Balloons*

The found new hardware wizard is displayed.




Windows asks if it can search for a driver on the internet.

Select "No, not this time" and click .

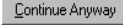


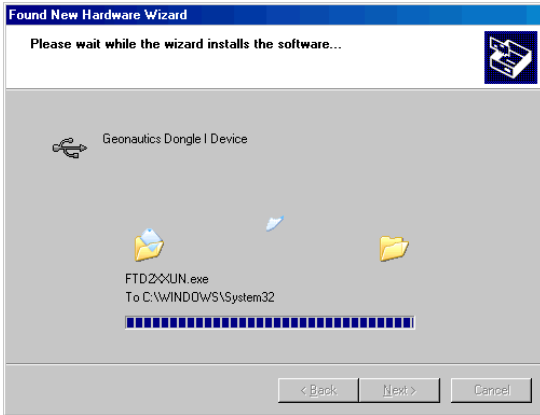
Windows asks to either install the driver automatically or search for the driver in a specific location.

Select the "Install the software automatically (Recommended)" option.

Pressing  starts a search for the appropriate driver. Once the driver is found, a warning message associated with the Dongle installation may be displayed.



If a warning window is displayed press  to start the driver installation.



As the installation finishes, a final completion dialog box is displayed.



Press .

The appropriate USB driver is installed.

## A.3 Troubleshooting the USB Downloader

If you are having trouble connecting your recorder to the **Joey Software**, take the following steps.

Before starting this procedure, ensure *all* applications have been closed.

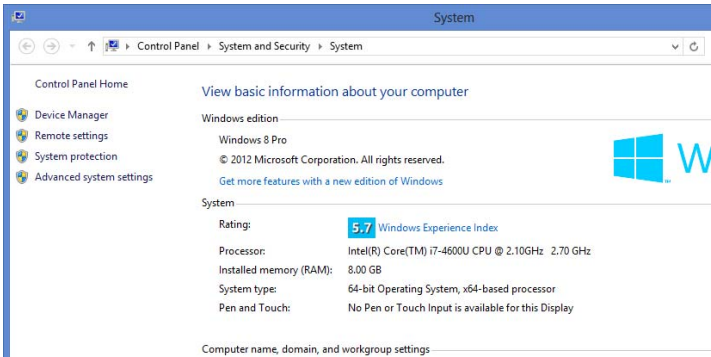
Disconnect, then reconnect the USB Downloader cable to be used on the USB port.

Disconnect all unused USB devices from the PC. Then reconnect the USB Downloader (**Dongle 1 or 3**) cable to be used into the USB port.

From the Windows desktop, load the **System Properties** by holding down the **Windows** (⊞) key and pressing the **Pause** key.

Alternatively, right click on the **This PC** in Windows 10 or the **My Computer** icon in Windows 8 and select **Properties** from the menu that appears.

The System Properties window should now be displayed.



Windows 8 System Properties Window

**Windows 10:** Click the **Device Manager** link in the list on the right of the System Properties window.

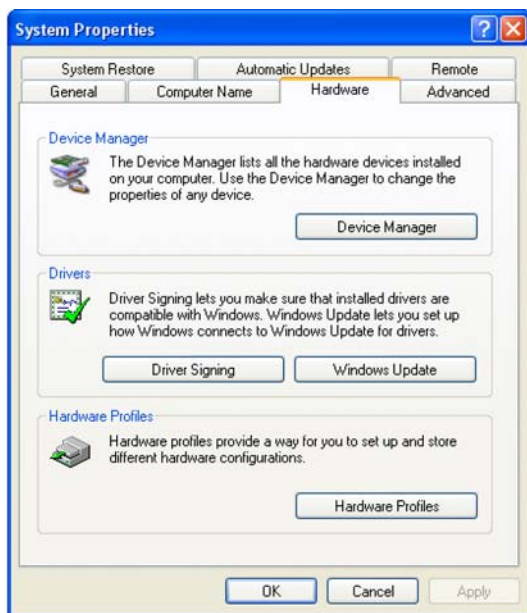
**Windows 8, 7, Vista-only:** Click the **Device Manager** link in the top left of the System Properties window.

**Windows XP-only:**

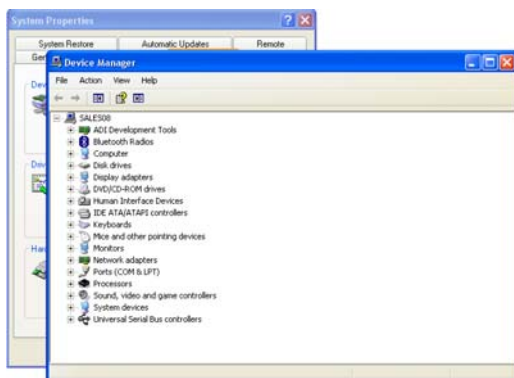


Windows XP System Properties Window

Select the **Hardware** tab.

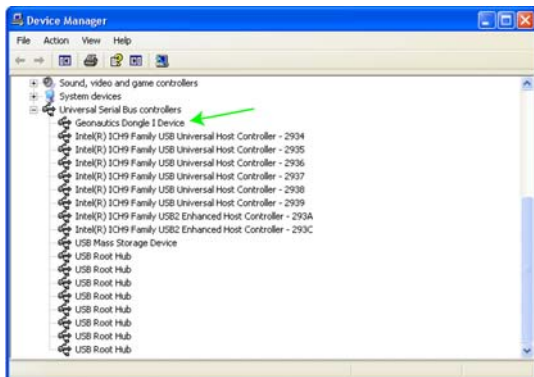


Windows XP-only: Click the **Device Manager** button. The Device Manager window is displayed.

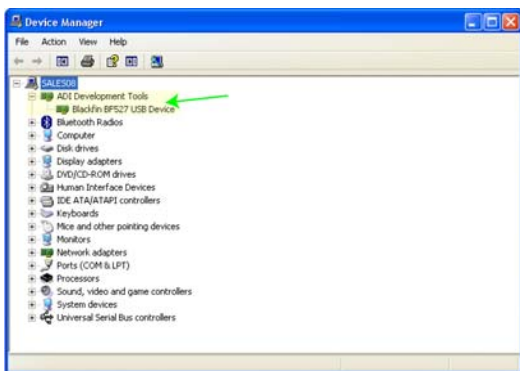


Windows 10, 8, 7, Vista, XP:

Click the “+” sign next to **Universal Serial Bus controllers**. This displays a list of USB devices including the **Nautics Group Dongle I Device**.



Where a Dongle3 has been installed the driver appears as an **ADI Development Tool** as below.



When running **Joey Software** ensure that you have the correct port selected. If you are using a USB downloader then you must ensure that the correct USB downloader is selected in the **Joey Software**.



*If more than **one** of the same type of USB Downloader is connected to a computer at a time, USB errors may occur.*

## ***APPENDIX B AUDIO FILE INTEGRITY***

To ensure the validity of the recorded data sets and to safeguard continuity of evidence, the \*.IM2 and \*.IX2 audio files use a packet data format that intertwines the recorded data with extra information so that data verification and integrity checking is possible. Packets are totally self-contained to prevent unauthorized changes of the audio image file. The data is further protected by the proprietary nature of the format and by data encryption for some models of the recorders.

The size of each audio packet generally represents between 0.005 and 0.15 seconds depending on the configuration and model of recorder.

The **Authenticate** program included with your recorder goes into more detail on how audio file integrity is implemented and can be verified. Consult your **Authenticate** user guide for more information.

An explanation of some the major integrity sources incorporated into each, and every packet of the audio image file follows.

### **B.1 Unique UNIT ID**

Each recording device is given a unique UNIT ID at the time of manufacture. The UNIT ID is coded into the internal memory of the unit and cannot be changed by the user.

The UNIT ID ensures audio image files from two or more different recorders have not been combined to create a new audio image file.

### **B.2 Unique Recording FILE NUMBER**

Every recording made on a particular recording device, is given a unique FILE NUMBER. The FILE NUMBER is generated by the recording device and cannot be nominated by the user.

The FILE NUMBER ensures audio image files from two or more different recordings have not been combined to create a new audio image file.



## B.3 TIMING Sequence

Each packet of audio data knows its position within the audio image file. The TIMING sequence is internally generated by the device and cannot be changed.

The TIMING sequence ensures sections of audio are not moved from their original position within the audio image file. On some recorders the timing sequence can be related back to recorder's internal real time clock, on others it represents the elapsed time.



*The current time if available is based on the recorder's real-time clock as set by the user. Integrity is performed on the sequence of the timing not upon the absolute value. Failure to correctly set the device's real-time clock does not affect the integrity of the audio image file.*

## B.4 CHECKSUM Errors

Each individual byte of audio data stored in the image file packet is manipulated to produce a CHECKSUM for the complete packet. At the time of verification, a newly calculated CHECKSUM is compared to the CHECKSUM created at the time of recording to verify the complete data packet.

The CHECKSUM ensures each byte of audio data stored has not changed since the time of recording.

## B.5 Irregularities

Irregularities within recordings are expected from time to time.

With analogue recordings we are accustomed to hearing a small amount of static, hissing or the occasional click or pop in the replayed audio. These are all evidence of irregularities, the difference with a digital product is that any such irregularities can be exactly quantified and are therefore brought to our attention.

If irregularities do occur in a file being authenticated, they should be assessed with a view to determining how much data is in question, where in the file the irregularity has occurred, and what relevance that section of data in question has to the audio file.

## B.6 What are Irregularities

Most people have experienced a CD which skips during playback or a computer disk which contains errors, both are good examples of what might happen to an \*.IM2 or \*.IX2 file from time to time.

Irregularities are pieces of data that are corrupt or otherwise damaged and cannot be validated by the authentication process. They are not necessarily wrong; they just cannot be verified as correct. Irregularities can be short, possibly less than a 10<sup>th</sup> of a second, or last for several minutes and causes the audio to be unusable during that section of the file. Unusable audio sounds like loud static, or possibly silence.

Irregularities in one section of a file have no influence on the other parts of an audio file.

## B.7 How Can Irregularities Occur

There are three main areas where irregularities can occur, during recording, during transfer and during storage.

Some reasons for the failure include,

- Interference from other electronic devices, such as cell phones or radio transmitters.
- Power fluctuations to the unit.
- Physical influences such as shock or pressure.
- Minor electronic failures.
- Computer glitches during transfer.
- Damage to the storage medium.

Note: This is not a complete list.

## B.8 Tampering

Most people with a computer could, with a little help or training, cut and paste an audio file to change it from the original. There may be a perception held by people that the same be true for \*.IM2 & \*.IX2 files. This is not the case.

\*.IM2 & \*.IX2 files are specifically designed to stop such interventions. When authenticated, tampering would be evident by large section of audio showing up as RED and containing irregularities in,

- **B.1 Unique UNIT ID**
- **B.2 Unique Recording FILE NUMBER**

or

- **B.3 TIMING Sequence**

Reverse engineering the packets and modifying the identifiers themselves is stifled by the chosen file format as explained in [Appendix B](#).

## B.9 When Irregularities Occur

If irregularities do occur then their effect on the integrity of the audio product should be assessed by ascertaining the length of the unusable section, its position in the file, and its influence on the remainder of the audio.

Once again, the file format chosen is specifically designed so that irregularities in one section of a file have no influence on the other parts of an audio file.

**APPENDIX C QUICK MENU GUIDE**

Menu Item	Link	Description
<b>File</b>		
Open ...	<a href="#">4.22</a>	Open IX2/IM2 or WAV file for playback
Convert to WAV ...	<a href="#">4.21</a>	Converts an existing IX2/IM2 file to WAV format.
Exit	<a href="#">4.27</a>	Exit Joey Software
<b>Commands</b>		
Download	<a href="#">4.8</a>	Downloads the selected recordings
Time and Date ...	<a href="#">4.3</a>	Check / Set the recorders time or date
Timer Recording ...	<a href="#">4.19</a>	Set the recorder to record automatically
Set or Clear PIN ...	<a href="#">4.18</a>	Limit access via Joey Software
Erase	<a href="#">4.9</a>	Erase ALL recordings on the recorder
Format Recorder	<a href="#">4.10</a>	Low level format (also erases the recorder)
Exit Test Mode	<a href="#">4.26</a>	Returns to full operation mode
<b>Query</b>		
Recorder		
Refresh List	<a href="#">4.13</a>	Manually update recordings list
Firmware Version	<a href="#">4.14</a>	Version information about the recorder
Memory Size ...	<a href="#">4.15</a>	Memory installed in the recorder
Bad Blocks ...	<a href="#">4.11</a>	Information derived from last format
USB Version ...	<a href="#">4.16</a>	Hardware of the USB dongle
<b>Tools</b>		
Edit Profiles ...	<a href="#">4.4.2</a>	View or create recording profiles
Configuration ...	<a href="#">4.2</a>	General program settings
View Log	<a href="#">4.2.6</a>	Communications log used to debug
Administration	<a href="#">4.19</a>	Password control of options

## ***APPENDIX D***

### ***TTI / TACTICAL TECHNOLOGIES INC - WARRANTY***

#### ***LIMITED (1) ONE YEAR WARRANTY***

TTI Warrants its devices and equipment for a period of one (1) year from date of shipment to be free from defects in workmanship or materials unless otherwise stated. The liability of TTI, under this warranty is limited to repair or replace, at its option, for any devices which are returned by the Purchaser during such warranty period, provided:

- TTI is notified in writing within five days, after discovery of such defects by the Purchaser. Proof of purchase must accompany notification.
- The defective units are returned to TTI with transportation charges Prepaid by the Purchaser. NO C.O.D. shipments will be accepted.
- Equipment damaged in shipment must be reported to and claim forms filed with carrier by customer. In shipments from TTI, notice and claim procedures will be initiated by TTI.
- TTI's examination of such units shall disclose to its satisfaction that such defects exist and have not been caused by misuse, misapplication, neglect, improper installation, improper storage, alteration, physical damage or accidents.
- The warranty shall not apply to microphones, batteries, antennas, crystals, or material ordinarily susceptible to field damage or any accessories of a disposable nature.
- This warranty does not apply to, and TTI does not independently warrant, items or systems sold by TTI which are produced by other manufacturers' and or which warranty cards or documents of the original manufacturers are included in shipment from TTI. With respect to such items, the purchaser must look to the warranty of the original manufacturer and TTI disclaims all warranty, expressed or implied.

In no event shall TTI be liable to the Purchaser for incidental, collateral, or consequential damages of any nature arising from the use, performance, sale, resale, or distribution of any of its products or from any cause or nature whatsoever.

This warranty is in lieu of all other warranties expressed or implied.

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