



VitalJacket® SDK

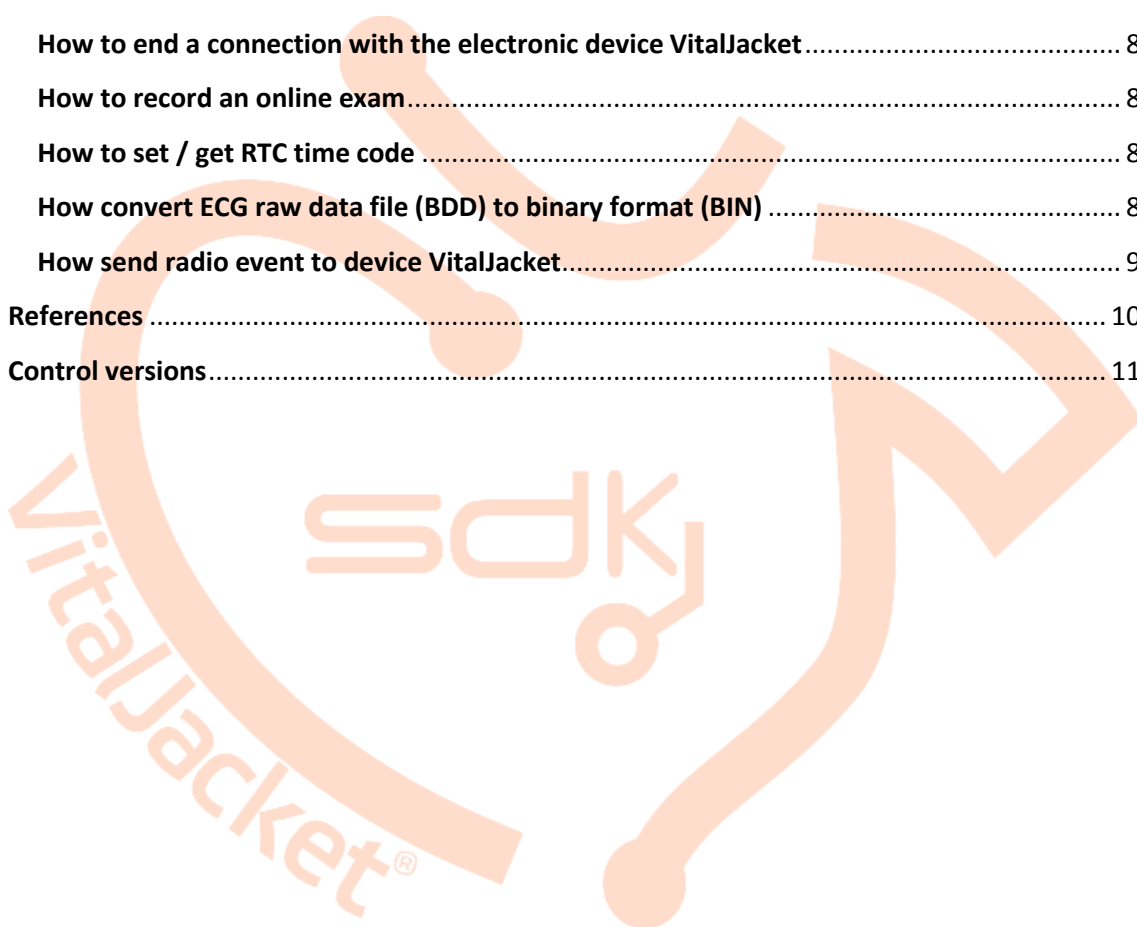
VitalJacket SDK v1.0.07 – ECGTool.exe application

LEGAL NOTICE AND DISCLAIMER

ATTENTION: Although **VitalJacket** is a certified medical device, its developer version is **NOT** certified for diagnosis usage. It is intended for R&D and development purposes **only**. Users of VJ SDK can submit their final developments to medical certification. All contents of our product are compliant with the European Medical Device directive 93/42/EEC but, being a developer's version, it's not certified.

Index

Introduction	4
Features ECGTool.....	5
How to configure the SD Card	7
How to search for a VJ device	7
How to connect to a VitalJacket device	8
How to end a connection with the electronic device VitalJacket	8
How to record an online exam.....	8
How to set / get RTC time code	8
How convert ECG raw data file (BDD) to binary format (BIN)	8
How send radio event to device VitalJacket.....	9
References	10
Control versions.....	11



Introduction

VitalJacket[®] is a wearable system with real time ECG acquisition that can be transmitted online or stored for posterior analyses. The ECG signal is send in real time to a online module using Bluetooth (wireless) or stored in a memory card. This data can be accessed through VitalJacket SDK package.



Features ECGTool



This manual describes the functionality of the ECGTool application.



Search for Bluetooth devices



Connect to device VitalJacket



Disconnect from device VitalJacket



Open application folder (default, 'C:\VJ_SDK\')



Open application options



Configure SD Card



Convert ECG data file (BDD) to binary format (BIN)



Set RTC date time to device VitalJacket (use date time of PC clock)



Get RTC date time from device VitalJacket



Start exam record (exam is recorded in directory selected, see application options)



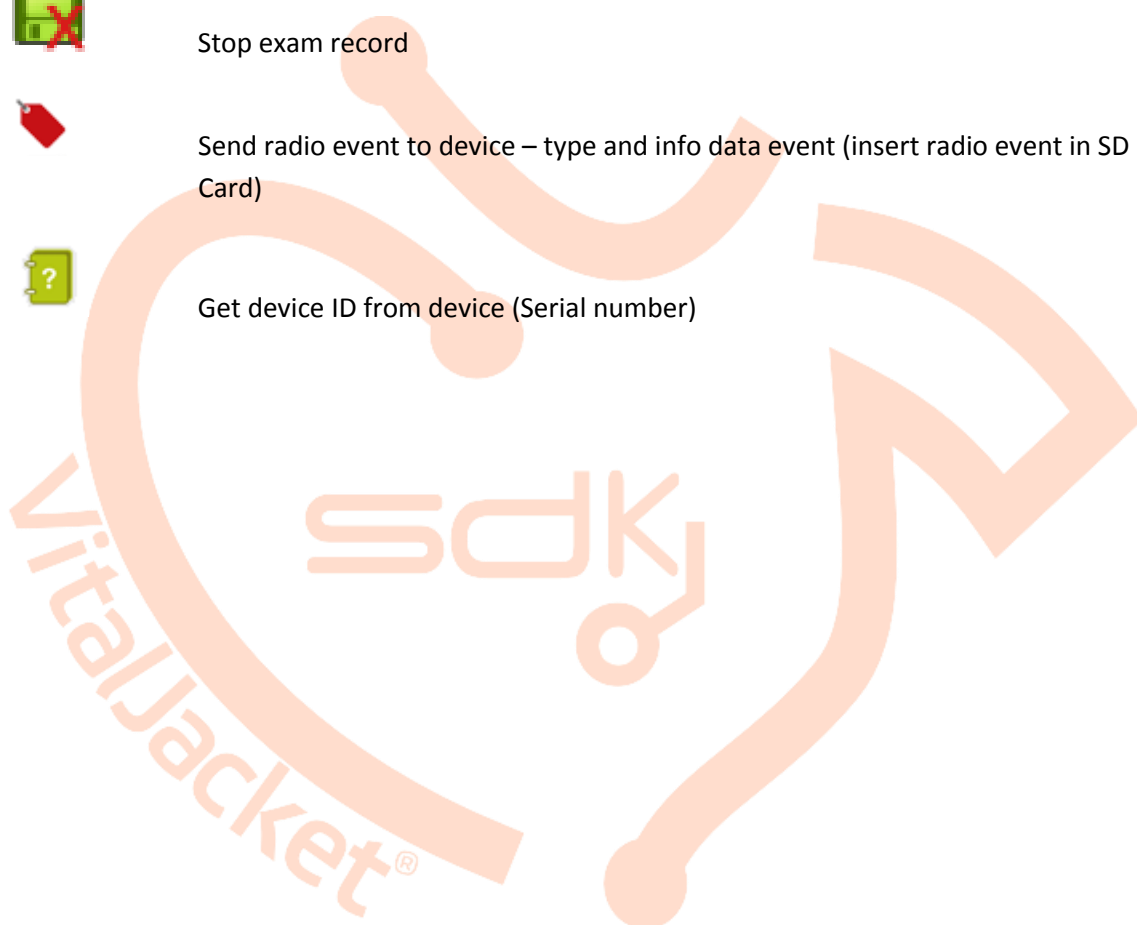
Stop exam record



Send radio event to device – type and info data event (insert radio event in SD Card)

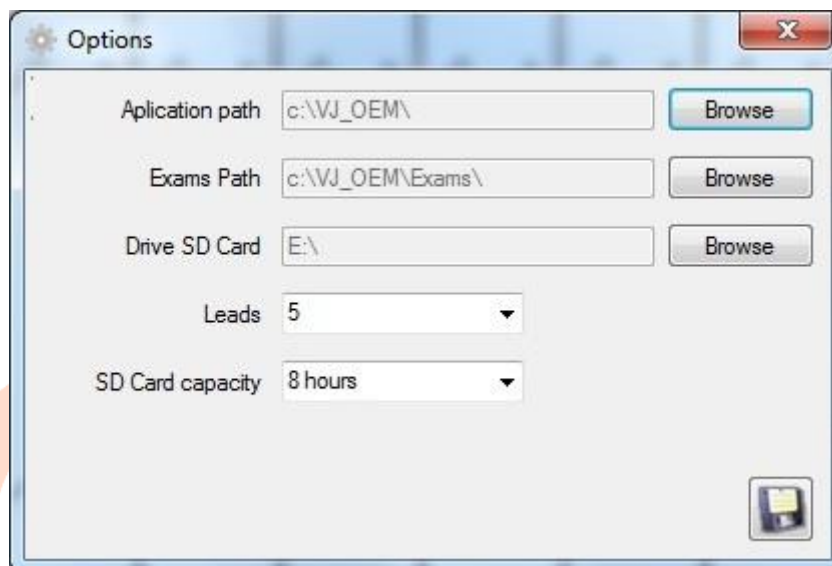


Get device ID from device (Serial number)

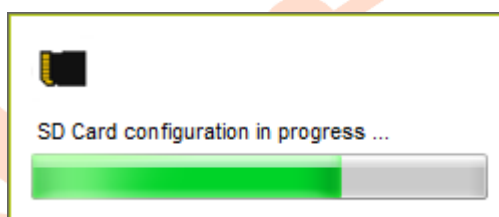


How to configure the SD Card


To configure the SD Card users must insert the SD card into the card reader (a message indicating that the SD card is inserted is displayed). The user must select the number of Leads that will be used and indicate the SD card capacity according to the exam that will be performed.




To configure SD Card press the  button. The SD Card will be configured according to the selected settings.




How to search for a VitalJacket device

To search for the devices that are available in the surroundings the user must click the search  button. In "Device List" all the available devices will be displayed (with the Bluetooth turned on) with their correspondent serial numbers.





How to connect to a VitalJacket device

To connect to a device, first select the device you want to connect to and press the  button. Once the connection is established the ECG signal is displayed.



How to end a connection with the electronic device VitalJacket

To end a connection with a VJ device the user must press the  button.


How to record an online exam

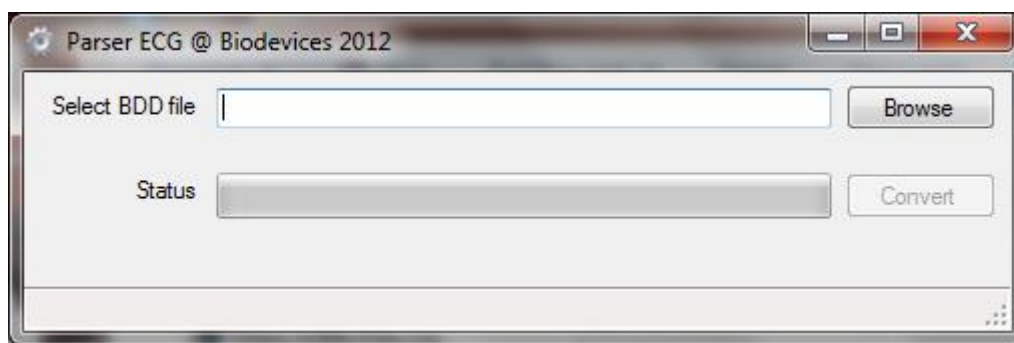
To begin recording an online exam which is being received from a VJ device just hit the Start Exam  button. Once you begin to record, the Start Exam  button toggles into the Finish Exam  button. To finish the recording you must hit the Finish Exam  button. The exam is recorded in the directory defined in application options.

How to set / get RTC time code

To set RTC timecode in device VJ press  button (use datetime of PC clock). To get RTC timecode from device VJ press  button.

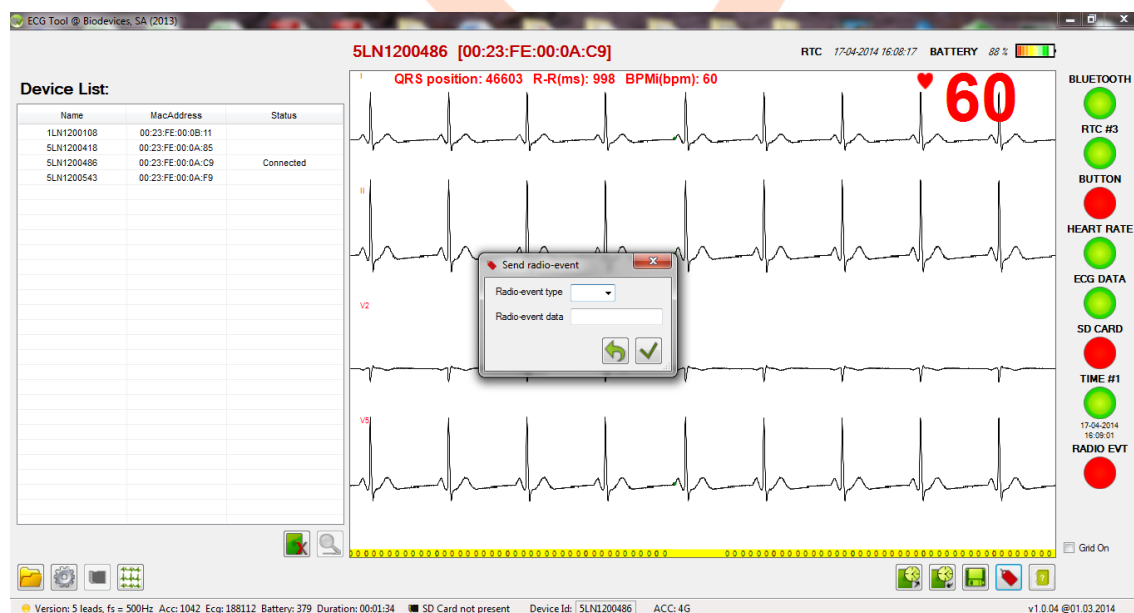
How convert ECG raw data file (BDD) to binary format (BIN)

To convert ECG raw data to binary format press the  button. The user must select the file you want to convert to binary format. The exam is converted in the directory defined in application options.



How send radio event to device VitalJacket

To send radio event to device press the  button.



The QRS detector used in ECGTool is based on the algorithm of Pan and Tompkins [1] and was used MIT-BIH database for validate results [2].

References

- [1] Pan J and Tompkins WJ. A Real-Time QRS Detection Algorithm. IEEE Transactions on Biomedical Engineering 32(3):230-236, 1985
- [2] MIT-BIH Arrhythmia Database: <http://www.physionet.org/physiobank/database/mitdb/>



Control versions

Version	Date	Change log
1.0.02	30-04-2013	<i>Get device ID</i>
		<i>Send radio event to device</i>
1.0.03	19-07-2013	<i>New method to send radio-event to device</i>
		<i>A new too l(InfoExporter.exe) for export data to Excel and Matlab</i>
1.0.04	01-05-2014	<i>Get / Set accelerometer sensibility</i>
1.0.07	15-03-2015	<i>Get firmware version from device</i>

