W2ND Heart Rate Transmitter Belt

DIRECTIONS FOR USE (DFU)

W2ND HEART RATE TRANSMITTER BELT is for Sports Use Only

Not a Medical Device

W2ND
SECOND WIND

1 INTRODUCTION TO W2ND HEART RATE TRANSMITTER BELT

W2ND heart rate transmitter belt is a wireless heart rate transmitter belt for your 8.0+ android phone. With W2ND heart rate transmitter belt, you can monitor your heart rate in real time as you train. This allows you to adjust your training so that your real-time or average heart rate is within the range that is most effective in reaching your individual training goals. Active sports men and women will find that W2ND heart rate transmitter belt is an invaluable tool in increasing the effectiveness of their training.

2 GETTING STARTED WITH W2ND HEART RATE TRANSMITTER BELT

Putting on W2ND heart rate transmitter belt to get the best results from your W2ND heart rate transmitter belt, it is important that you wear it correctly. To put it on, just follow the simple steps below:
1. Put on your HR transmitter belt and ensure it fits snugly against your chest.
2. Ensure the electrodes of the transmitter belt are lightly wet.
3. Hook the open loop over the clasp.
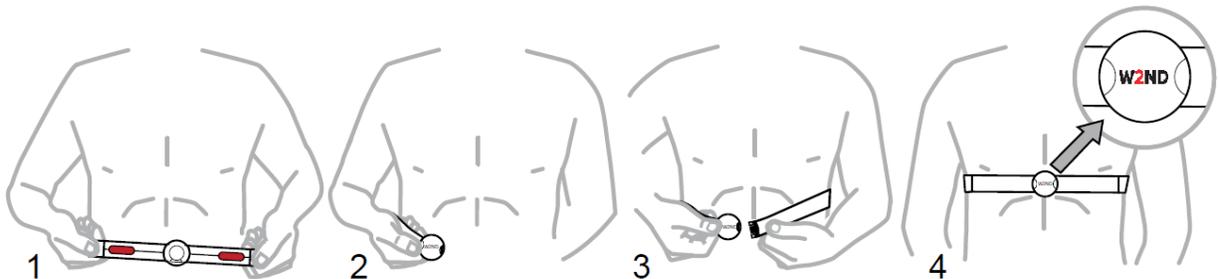
 4. We recommend that you wear the transmitter belt against your bare skin to ensure flawless operation. Make sure the black and red W2ND logo points outwards when you are wearing the belt.

3. WARNING
Before starting the initial use of the transmitter belt, we recommend an exercise test under a doctor's supervision. People who have a pacemaker, defibrillator, or other implanted electronic device use the transmitter belt at their own risk. Exercise may include some risk, especially for

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those who have been sedentary. We strongly advise you to consult your doctor prior to beginning a regular exercise program.

4. ACTIVATING

The belt activates and starts sending data automatically when you put it on.

5. CONNECTING

Open the W2ND App on your android phone and touch the bLe (bluetooth low energy) icon. For information on connecting the belt to your compatible W2ND device, please refer to the device's manual.

6. PRACTICAL TIPS

 If the heart rate belt does not seem to be sending heart rate data correctly:

1. Be sure to rinse the chest belt off with tap water after every workout.
2. Ensure the contacts (electrodes) are wet before initially placing belt on chest.
3. Adjust the belt so that it fits snug against your chest.
4. Re-start the W2ND Android App.
5. Go the non-medical ECG pageview and check that the morphology of the ECG is normal.
6. Normal ECG morphology can be seen at https://en.wikipedia.org/wiki/Electrocardiography .
7. Consider replacing the CR 2025 battery (expect about one month battery life under normal usage conditions).
8. If your skin tends to remain dry during the workout, you can improve the contact by using electrode gel or wetting the belt using tap water prior to putting on.

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9. The red led on the W2ND pod will flash more often after removing it from the belt when the battery is low.

10. Another way to check battery reserve is to ask us to forward the link for the Movesense companion android app which will provide battery power left in percent.

11. If there is hair on the chest consider shaving for most accurate data.

12. If the chest belt has been used for more than three months and there are signs of salt corrosion and or staining consider replacing the belt, especially if the belt has not been rinsed off with tap water after every workout.

7. NON-MEDICAL ECG MORPHOLOGY
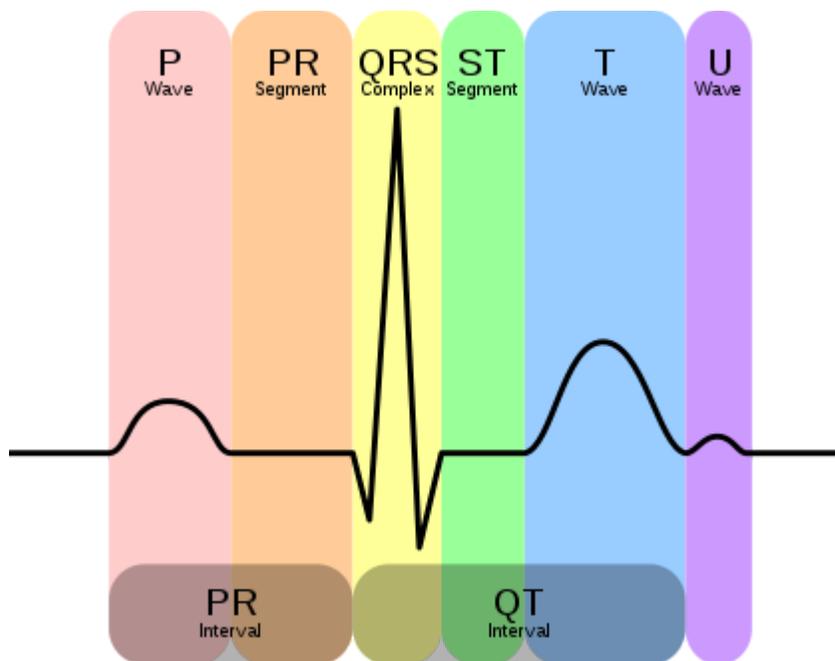
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8. REPLACING THE BATTERY

The transmitter belt operates on a 3-Volt lithium cell, type: CR 2025. The average expected battery life of the transmitter belt is 40 hours of use (about one month). Replace the battery as illustrated here:
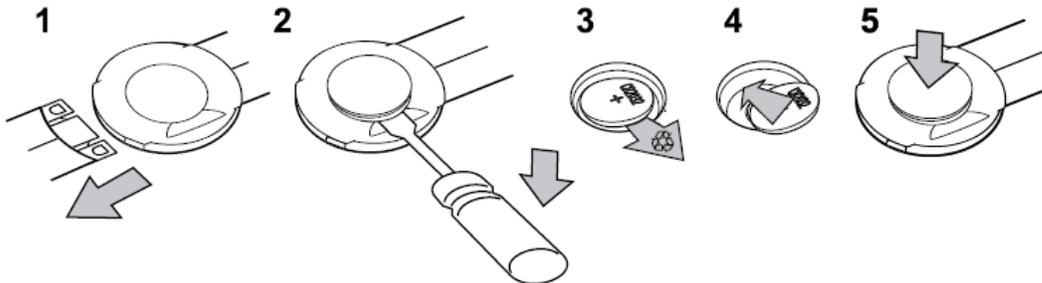
NOTE: Please inspect the O ring and make sure it is in good condition for best waterproof and sweatproof operation. Replacement O rings are available from W2ND. Replacement batteries available from your favorite retailer or amazon.

9. TECHNICAL SPECIFICATIONS

- Water resistance: 20 m / 66 ft
- Weight: max. 42 g
- bLe Frequency: 2.4 GHz IEEE 802.15.1
- Transmission range: 10 meters (outdoors)
- User-replaceable battery CR2032

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10. COPYRIGHT

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11. TRADEMARK

W2ND and its product names, trade names, trademarks and service marks whether registered or unregistered are protected by W2ND or respective third party owners. All rights reserved.

12. PATENT

These products are protected by the following patent and patent applications US 7129835, US 11/169712, US 11/808391 and FI 20075938. Other patents have been applied for.

13. DISCLAIMERS

14. USER'S RESPONSIBILITY

This instrument is intended for recreational use only. W2ND heart rate transmitter belt must not be used as a substitute for obtaining measurements that require professional precision and must not be used to obtain measurements that require laboratory-quality measurements.

15. CE

The CE mark is used to mark conformity with the European Union EMC directives 89/336/ EEC and 99/5/EEC.

16. FCC COMPLIANCE

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Repairs should be made by authorized W2ND service personnel. Unauthorized repairs will void warranty. This product has been tested to comply with FCC standards and is intended for home

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or office use only. FCC WARNING: Changes or modifications not expressly approved by W2ND could void your authority to operate this device under FCC regulations.

17. DISPOSAL OF THIS DEVICE

Please dispose of the device in an appropriate way, treating it as electronic waste. Do not throw it in the garbage. If you wish, you may return the device to your nearest W2ND representative.

18. COMPATIBILITY

W2ND just works with Android 8.0+ due to extensive digital signal processing requirements (note: not iOS compatible).
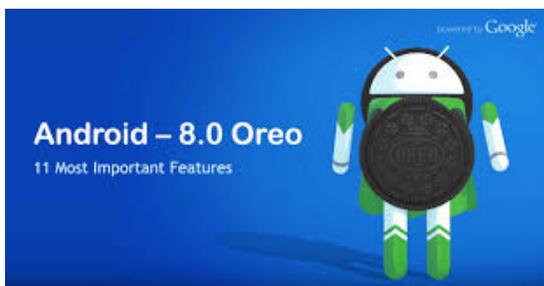
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For best Android App performance:
● Turn off auto-rotate function
● Turn off screen saver and sleep functions
● Close most (if not all) other Apps because they may interrupt data collection
● Consider "pinning" the W2ND App to the foreground
● Consider making font size smaller if numbers do not fit on your screen properly

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19. DOWNLOAD

Download W2ND Android APP from Google Play and install on your android 8.0+ smartphone

W2ND
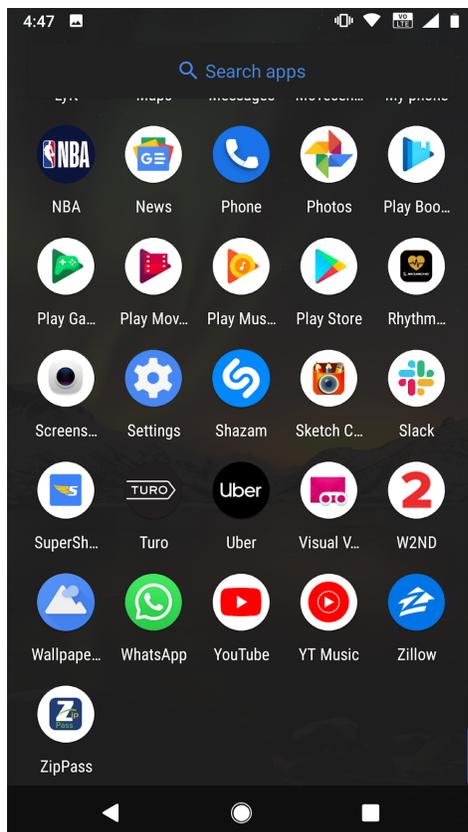
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Download 2 App from Google Play Store

20. W2ND APP PAGEVIEWS
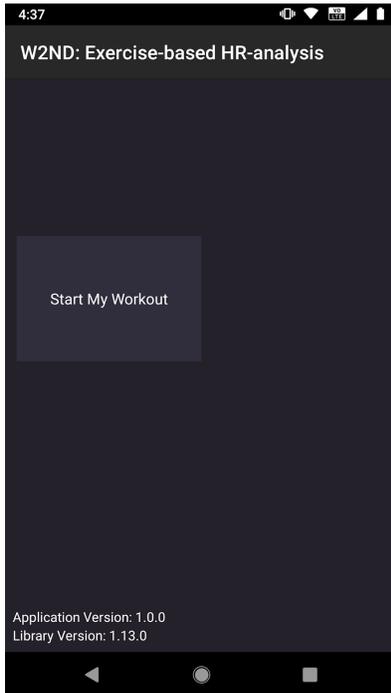
Tap Start My Workout, when ready.

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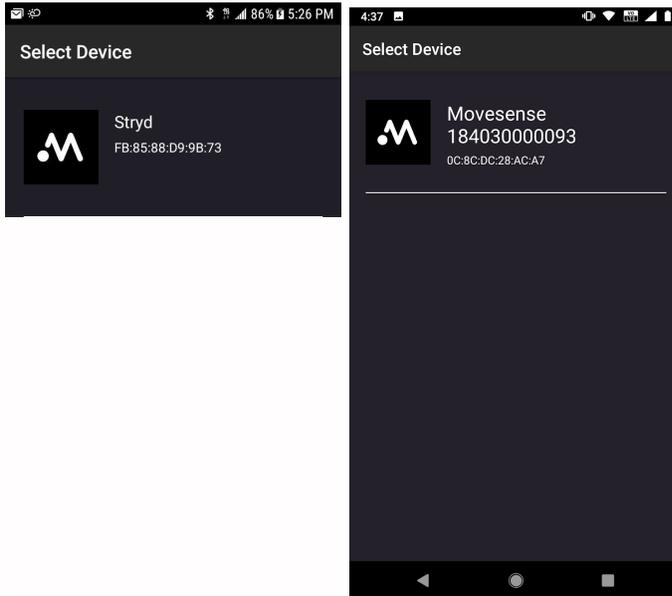
Tap device(s) you want to use during your workout:
- W2ND Heart Rate Transmitter Belt (required), which is 'Movesense'
- Bluetooth Power Device / Power Meter (optional), which is 'Stryd'

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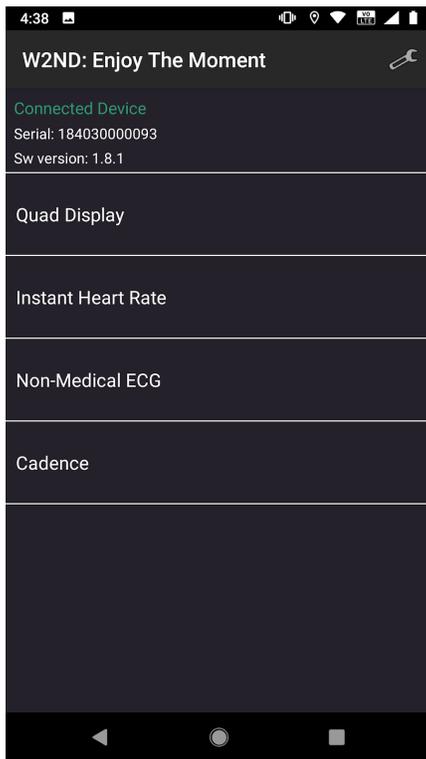
Tap the desired pageview:
- Quad Display
- Instant Heart Rate
- Non-Medical ECG
- Cadence

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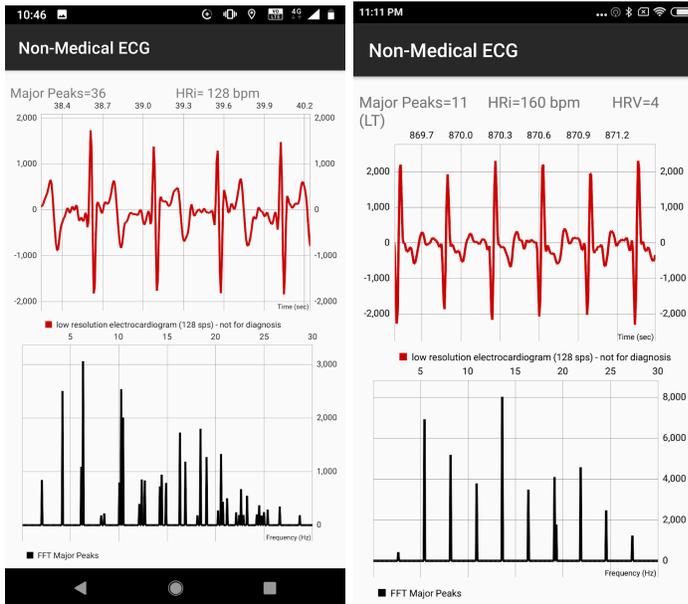
Non-Medical ECG:

- Look for this type of signal to make sure chest belt is placed properly;
- To improve signal: moisten electrodes
- To improve signal: minimize or shave hair where hard plastic electrodes touch skin
- Signal will typically improve with sweating
- Top graph: time versus millivolts (128 samples per second)
- Bottom graph: frequency versus magnitude (Fast Fourier Transform)
- Bottom graph on right screen shot demonstrates Lactic Threshold! (LT/FTP)
- FTP = Functional Threshold Power

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Cadence:

- Works best for walking, running, spinnng and indoor cycling.
- May not always be accurate during outdoor cycling
- Top graph: time versus 3D acceleration (13 samples per second)
- Bottom graph: frequency versus magnitude (Fast Fourier Transform)

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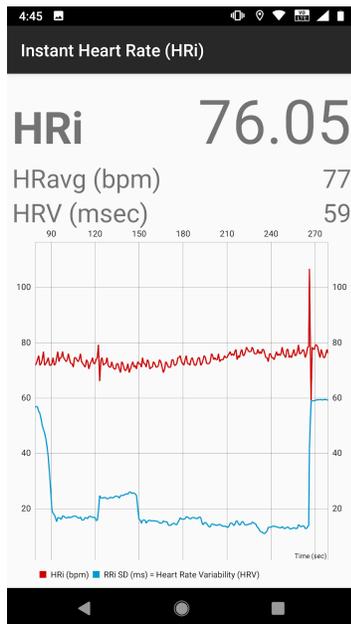
Instantaneous Heart Rate:

- W2ND recalculates your heart rate every heartbeat (Red line)
- Heart rate variability is calculated using the SDNN method (Blue line)
- Top Red line: time versus instantaneous heart rate
- Bottom Blue line: time versus heart rate variability

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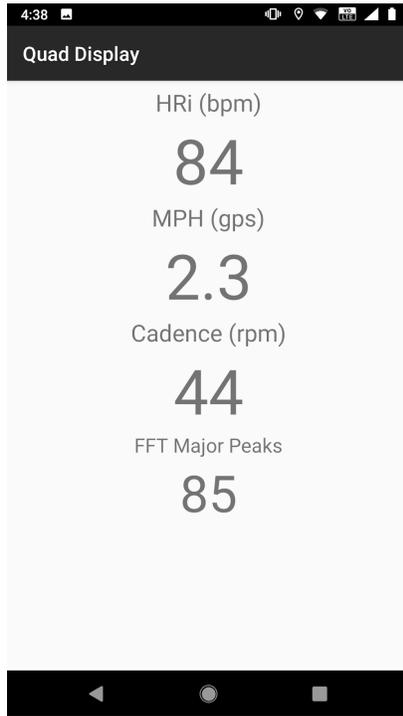
Quad Display:
- Top line: HRi - Instantaneous Heart Rate (BPM)
- Second line: MPH - Miles Per Hour (Outdoors only in GPS enabled devices)
- Third line: Cadence - Rotations per minute (RPM)
- Fourth Line: FFT Major Peaks
- Bottom line: coming soon, Time in power zones or heart rate zones

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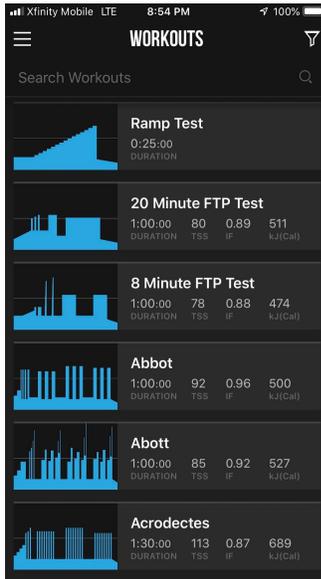
Example Power APP (Trainer Road):
- W2ND recommends 20 min FTP test to calculate LT!

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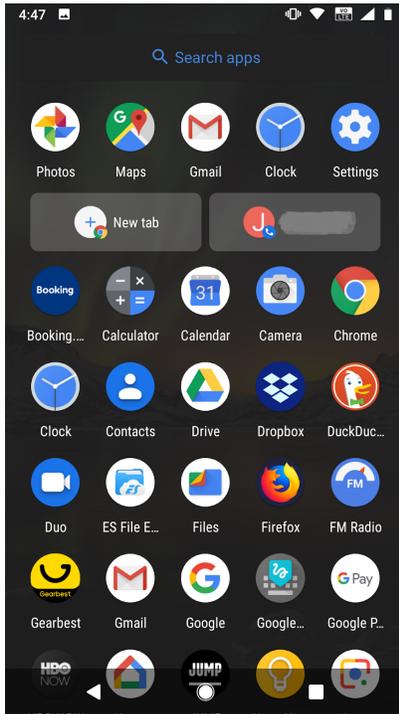
Find your saved files using ES File Explorer or Android File Manager

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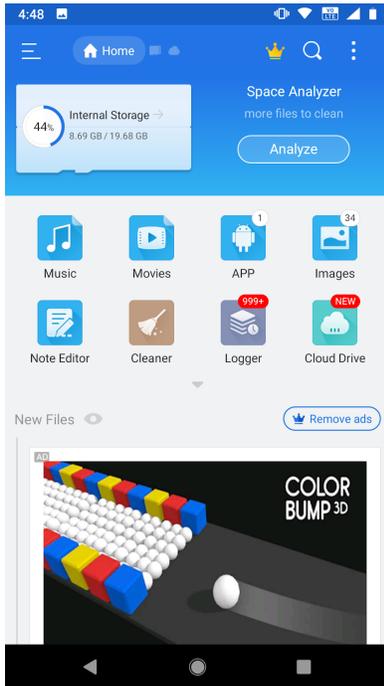
Find the W2ND Folder by clicking on Internal Storage using ES File Explorer

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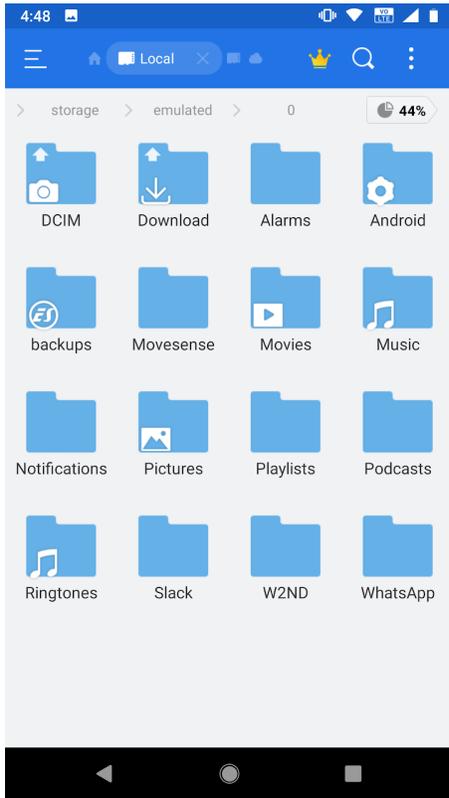
Saved workout files are located in the W2ND folder

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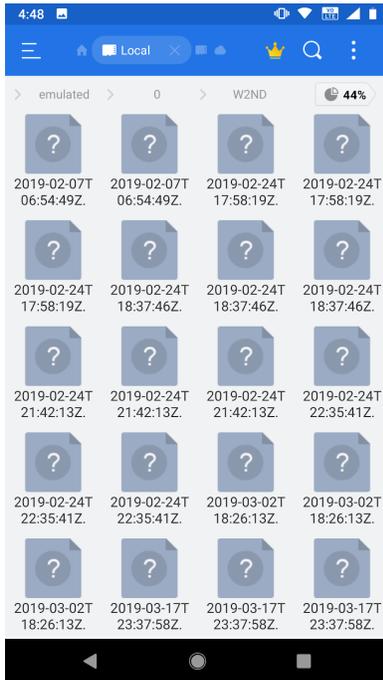
Saved workout files are in the W2ND folder:

- Workout file names are time stamped with universal world time
- Convert universal world time to your local time using any internet time conversion app
- The time stamp is at the beginning time of your workout
- Three files are generated for each workout
- File One: Heart Rate
- File Two: Accelerometer
- File Three: Non-Medical ECG
- Please clear unused files out periodically to preserve memory
- Click 3 dots on upper right to share files to your google drive

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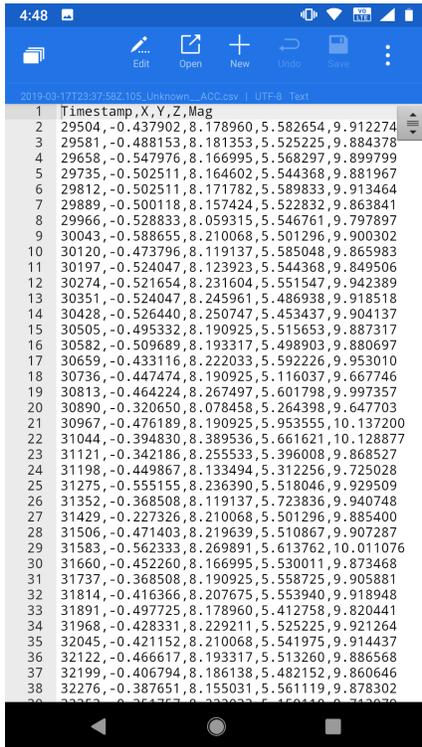
Accelerometer File:

- First line is header line
- Raw data saved at 13 Hz
- First column is time in milliseconds

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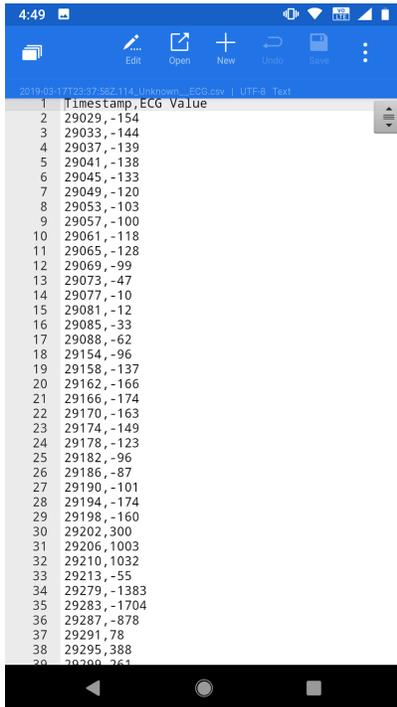
Non-Medical ECG File:

- First line is header line
- Raw data saved at 128 Hz
- First column is time in milliseconds

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Heart Rate File:

- First line is header line
- Raw data saved every heartbeat
- HRV is calculated using SDNN method
- First column is time in milliseconds

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