BULLETSEEKER®

INSTRUCTION MANUAL

Version 2.3 December 2022

For Competitive Marksmanship

PREPARED BY
LongSeeker SRO

VERSION MACH 4

BULLETSEEKER®

Table of Contents

1.Introduction

BULLETSEEKER®

MANUFACTURED 100% IN EUROPE
GUARANTEED 12 MONTH WARRANTY

ENGINEERED AND DEVELOPED BY A TEAM OF EUROPEAN ENGINEERS FROM GERMANY, CZECH REPUBLIC AND NETHERLANDS

LIGHTNING FAST TECHNOLOGY BUILT INTO THE RADAR THAT FITS INTO THE PALM OF YOUR HAND AND MOUNTS DIRECTLY ONTO YOUR FIREARM.

THE BULLETSEEKER IS THE MOST ADVANCED RADAR FOR BULLET SPEED DETECTION ON THE MARKET

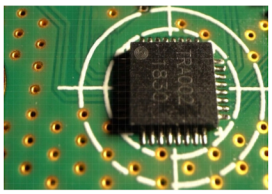
CAPTURING SPEEDS UP TO 1200 m/s - 4000fps.

PATENTED TECHNOLOGY WITH HIGHLY OPTIMIZED PHOTO FILM ALUMINIUM LENSES

BULLETSEEKER is a LONGSEEKER BRAND

2. Technical Features

BULLETSEEKER®



- 120 GHz radar
- The 120 GHz radar SiR-chip and the beam-forming lens – made in Germany
- Biggest radar cross section of bullets and pellets on the market.
- Enjoy extremely high accuracy with multiple detections in the 1st meter.
- True muzzle speed
- Not affected by wind and air pressure.
- Very short wavelength of only 2.5 mm
- 20 to 2000+ measuring points
- BLUETOOTH pairing
- iOS & Android mobile devices

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SPEED MATTERS

ENJOY ACCURACY

BULLETSEEKER®

3. FIRST USE SETUP

1. Start the app
2. Click "Connect" on the HOME screen.
3. Turn on the BULLETSEEKER,
   - the LED lights up orange until pairing
4. PIN is not needed on newer versions (224466 for pairing older BULLETSEEKER)
5. After pairing,
   - the LED will turn green, ready to shoot
6. Shooting:
   - When a shot is detected, the LED will turn blue while data is being transferred from the

     BULLETSEEKER to the APP,

     Light changes back to green - this means you are ready for the next shot
7. Sensitivity is now set automatically thanks to our user feedback.

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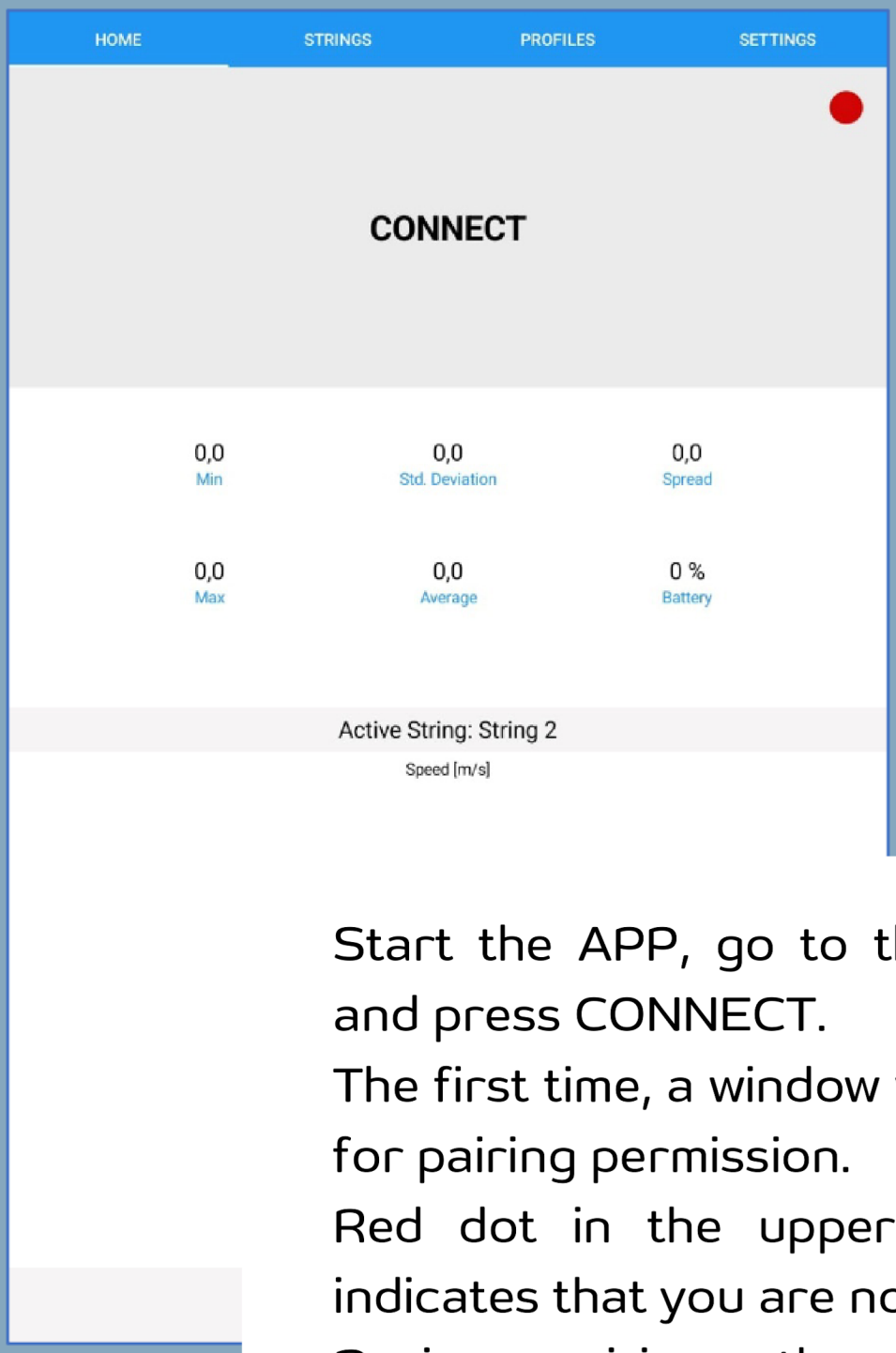
ON / OFF

1. Press the switch on/off
2. BLUE: BLUETOOTH is on - Open the APP on your phone.
3. GREEN: Mobile device is connected to BLUETOOTH

BULLETSEEKER®



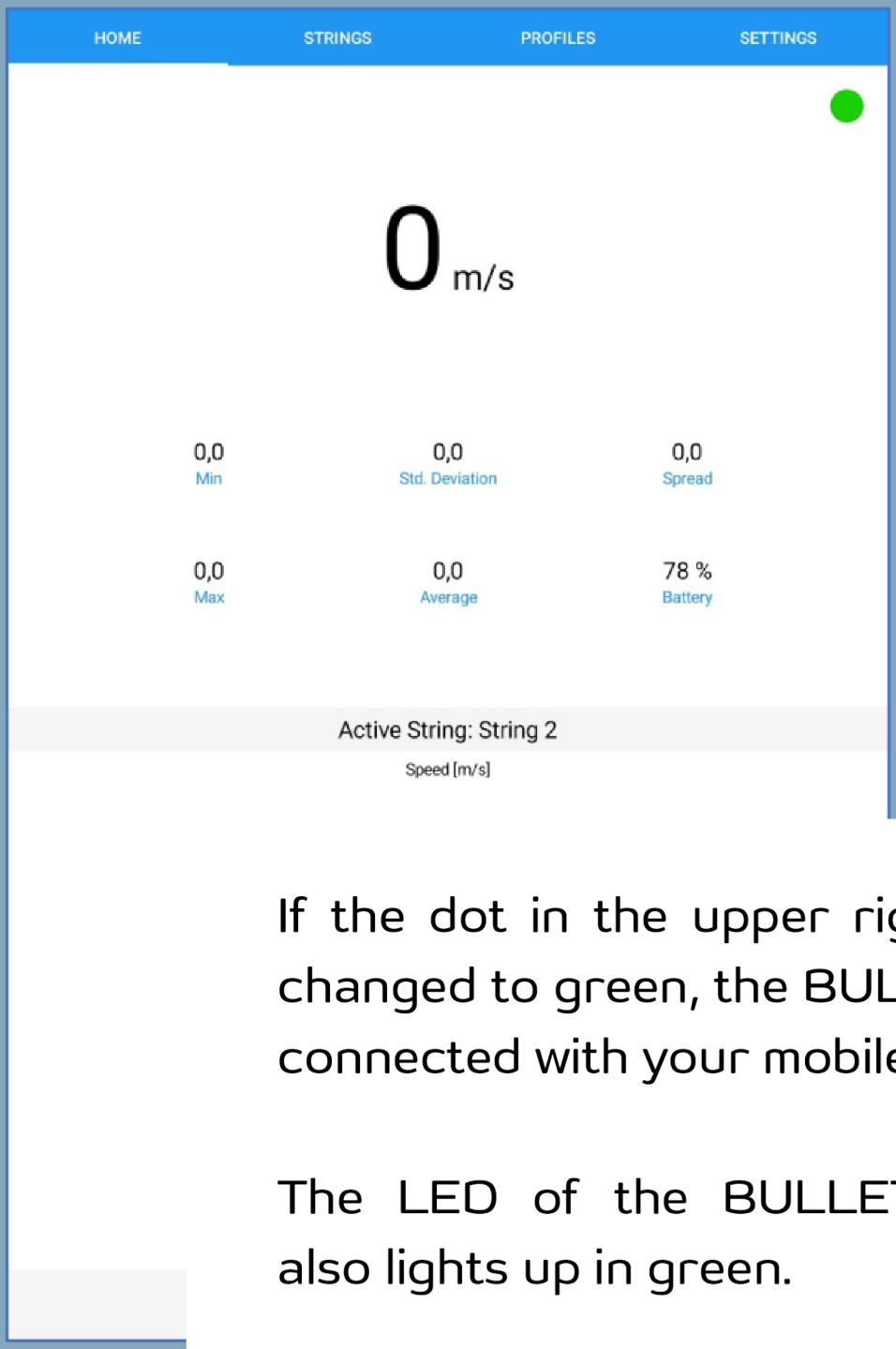
Start the APP, go to the HOME screen and press CONNECT.

The first time, a window will pop up asking for pairing permission.

Red dot in the upper right corner is indicates that you are not connected.

During pairing, the BULLETSEEKER flashes blue. Blue always indicates searching or sending Bluetooth connections. Essentially it is searching.

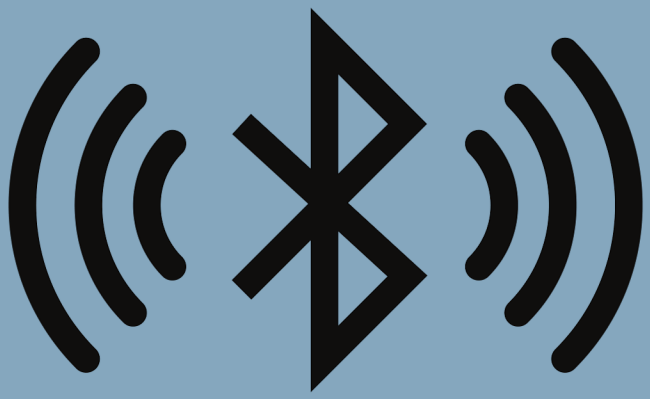
BULLETSEEKER®



If the dot in the upper right corner has changed to green, the BULLETSEEKER is connected with your mobile device.

The LED of the BULLETSEEKER now also lights up in green.

You are Ready for shooting.



4. APPLICATION

M4

The application is complex. It has several features contributing to the speed analysis of the bullet.

All of the data that is stored on your phone can be exported.

Ypu can also use the data in external programs.

You can create a backup and restore it again.

Several profiles can be created.

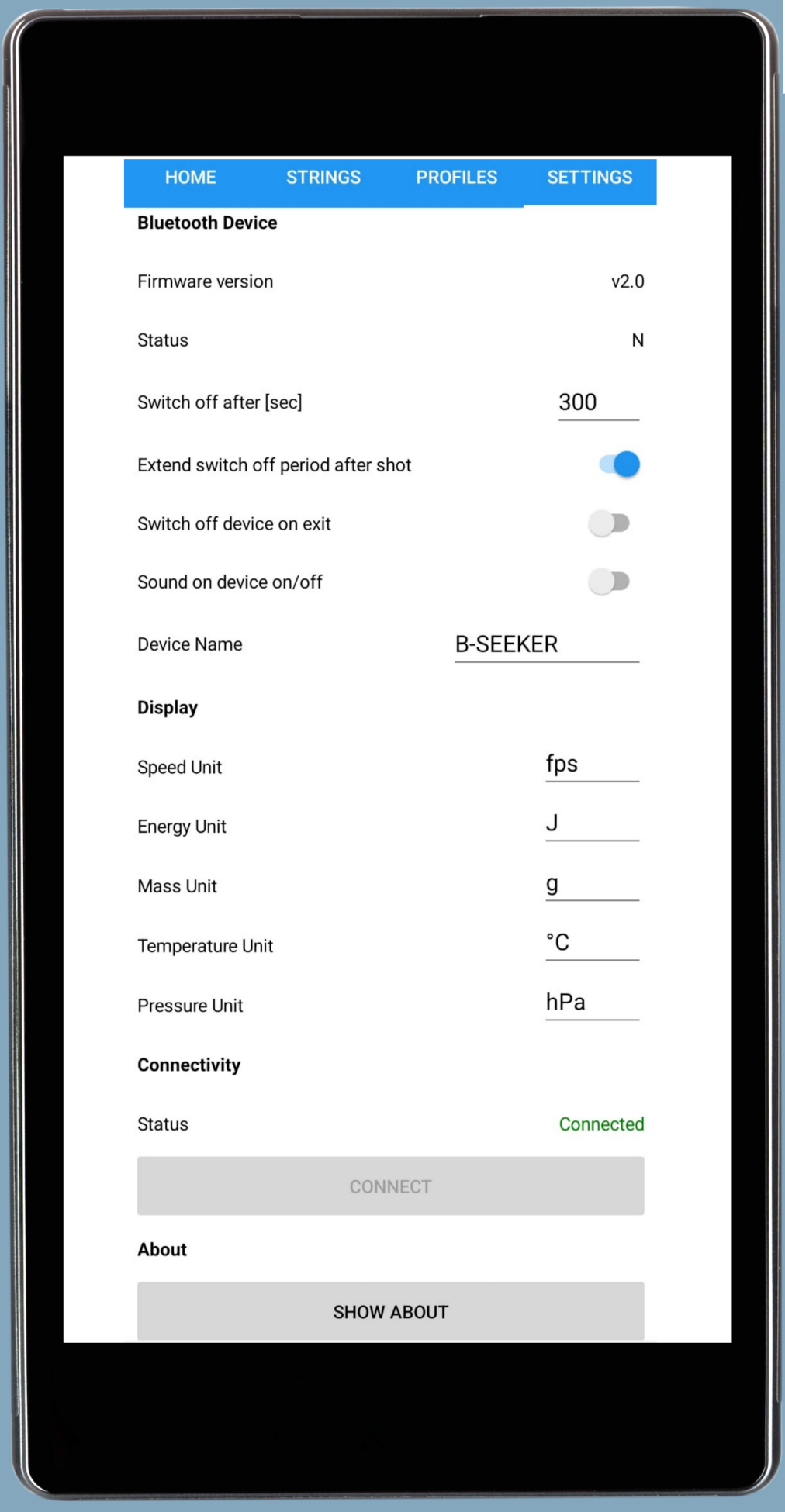
Various types of firearms and information can be distinguished in you data sets. i.e. rifle, barrel length, ammunition data ect., etc.

Your location and weather data will be saved.

Settings are preset to adapt to a wide range of ammunition speeds

Although fully automated, there are many options to customize your data.

M4



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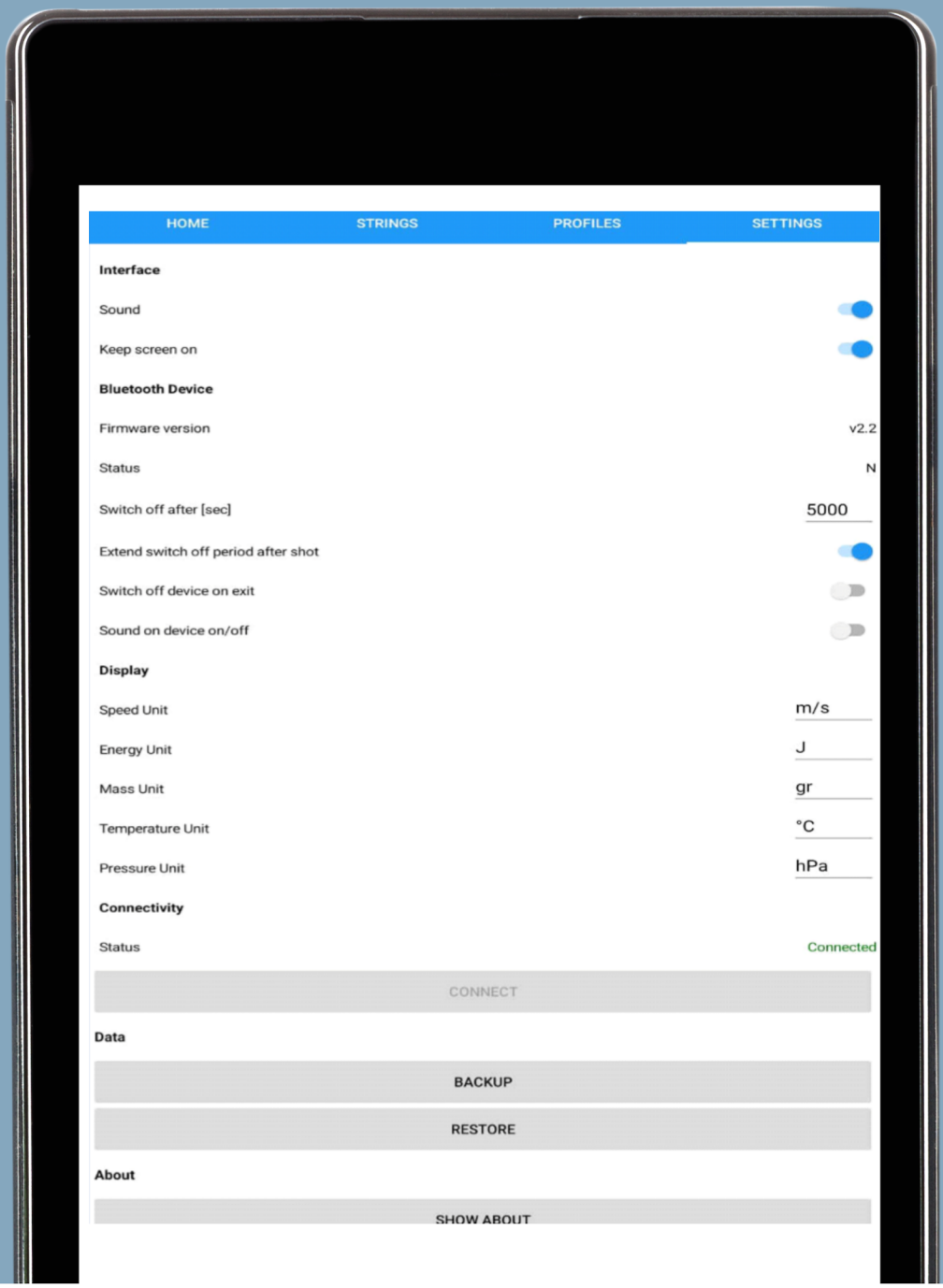
4.1 Settings



Units can be set to metric or imperial

View ABOUT

- press the button
- the APP version will be displayed

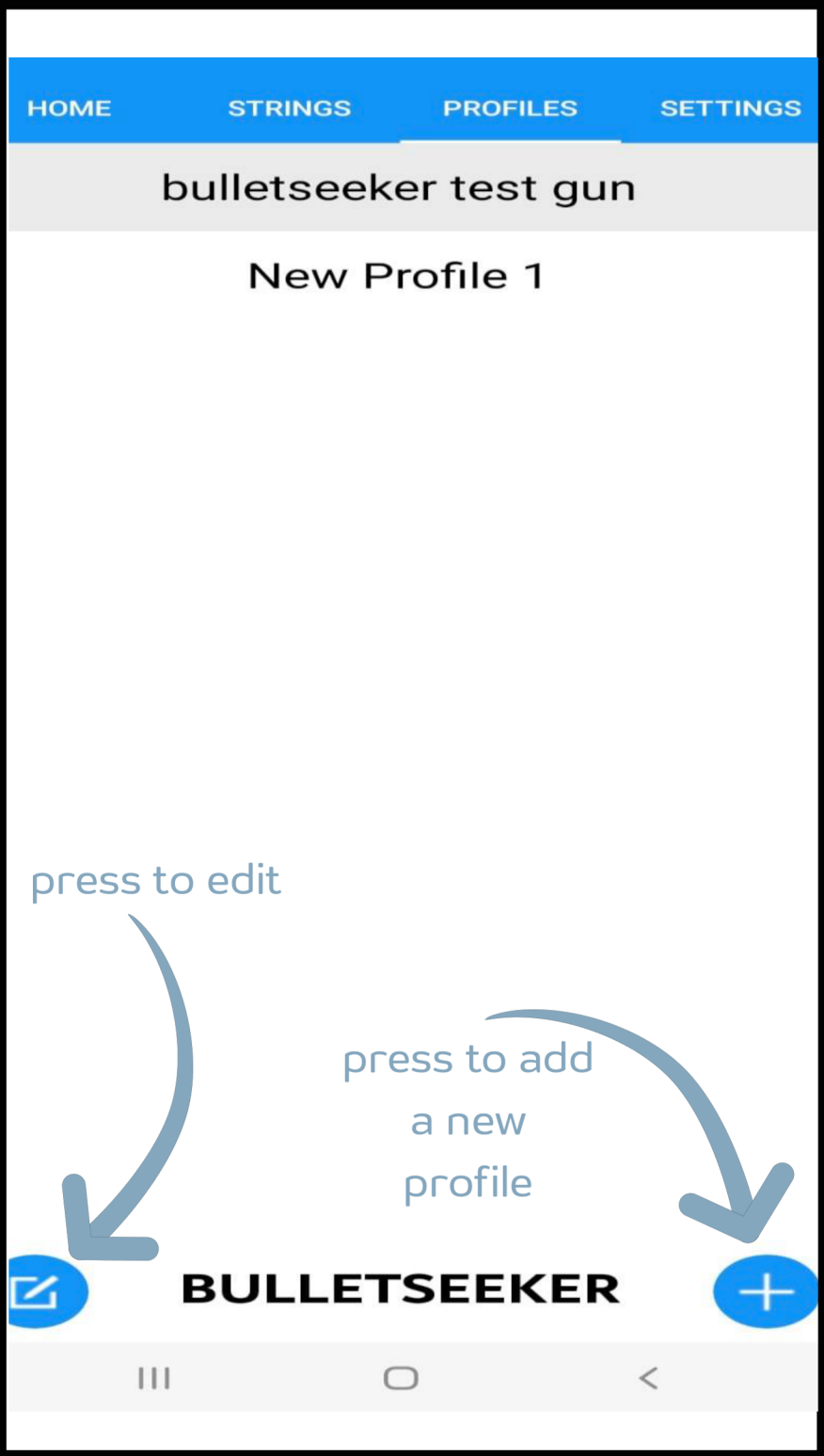
SOUND

- the language set in the phone will be used

4.2 Profiles

M4

Set your own Profiles
metric or imperial



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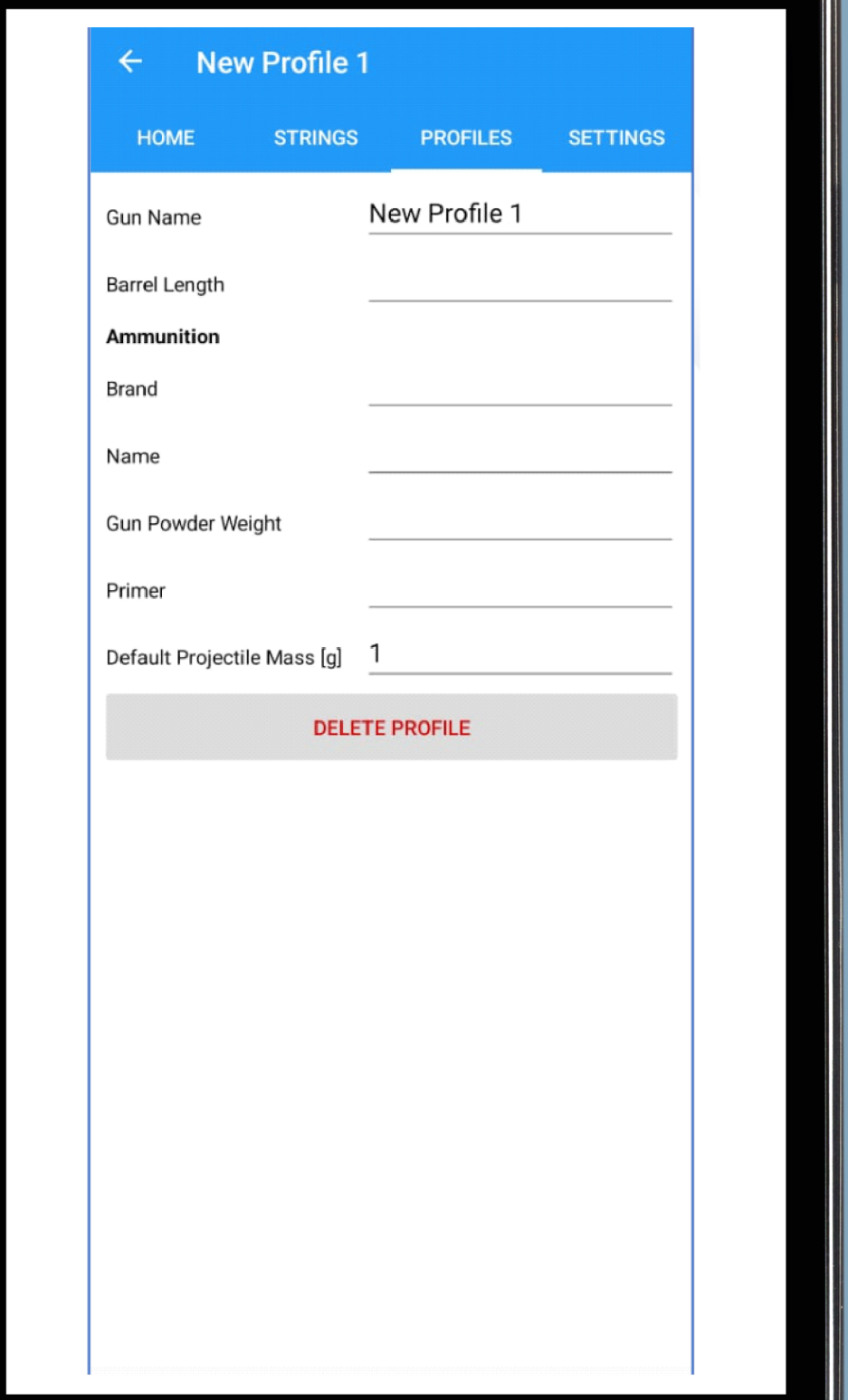
4.21 Profiles

M4

Customize and edit each row
to your preference



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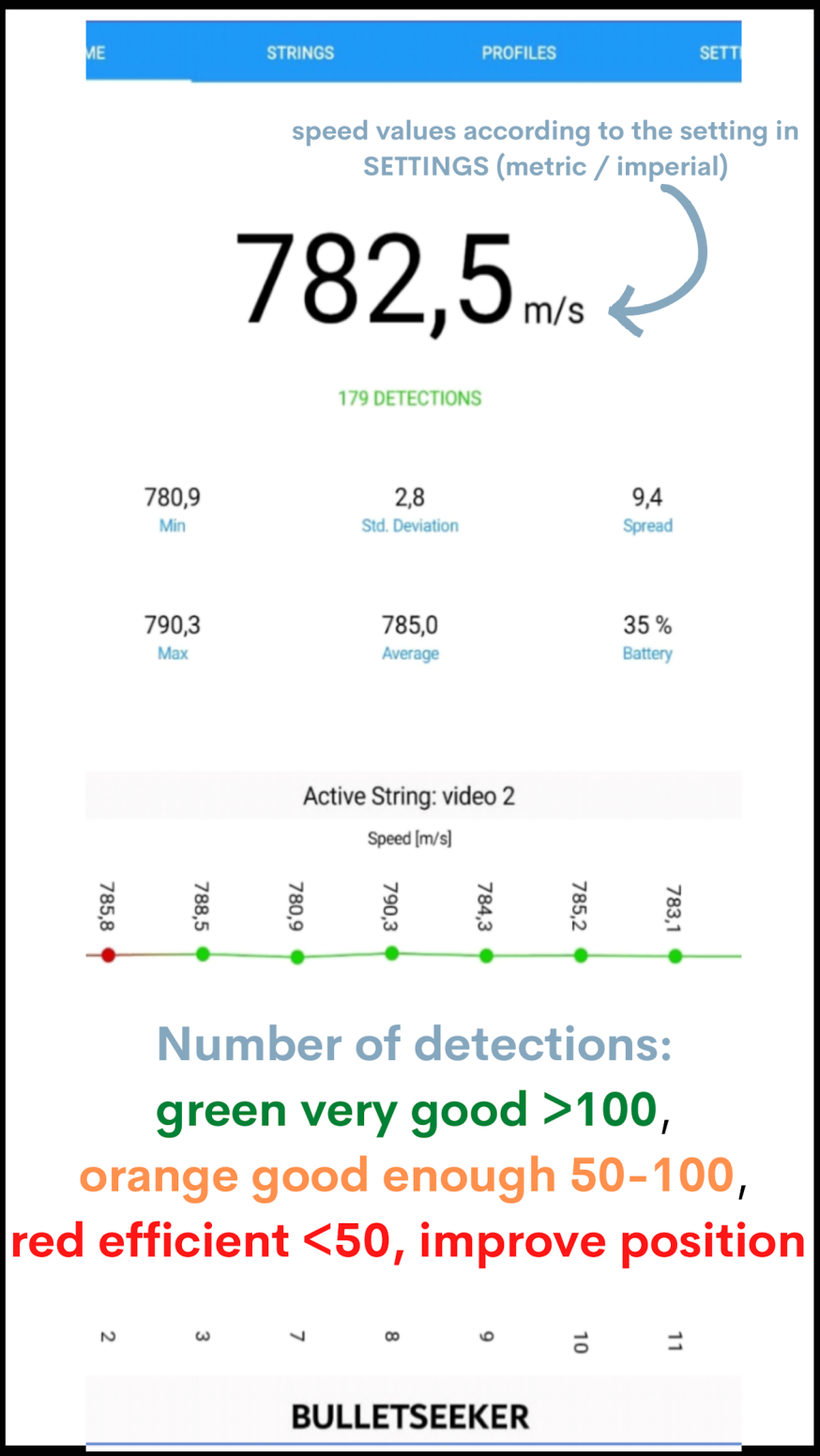
4.3 Home

M4

Customize and edit each row
to your preference



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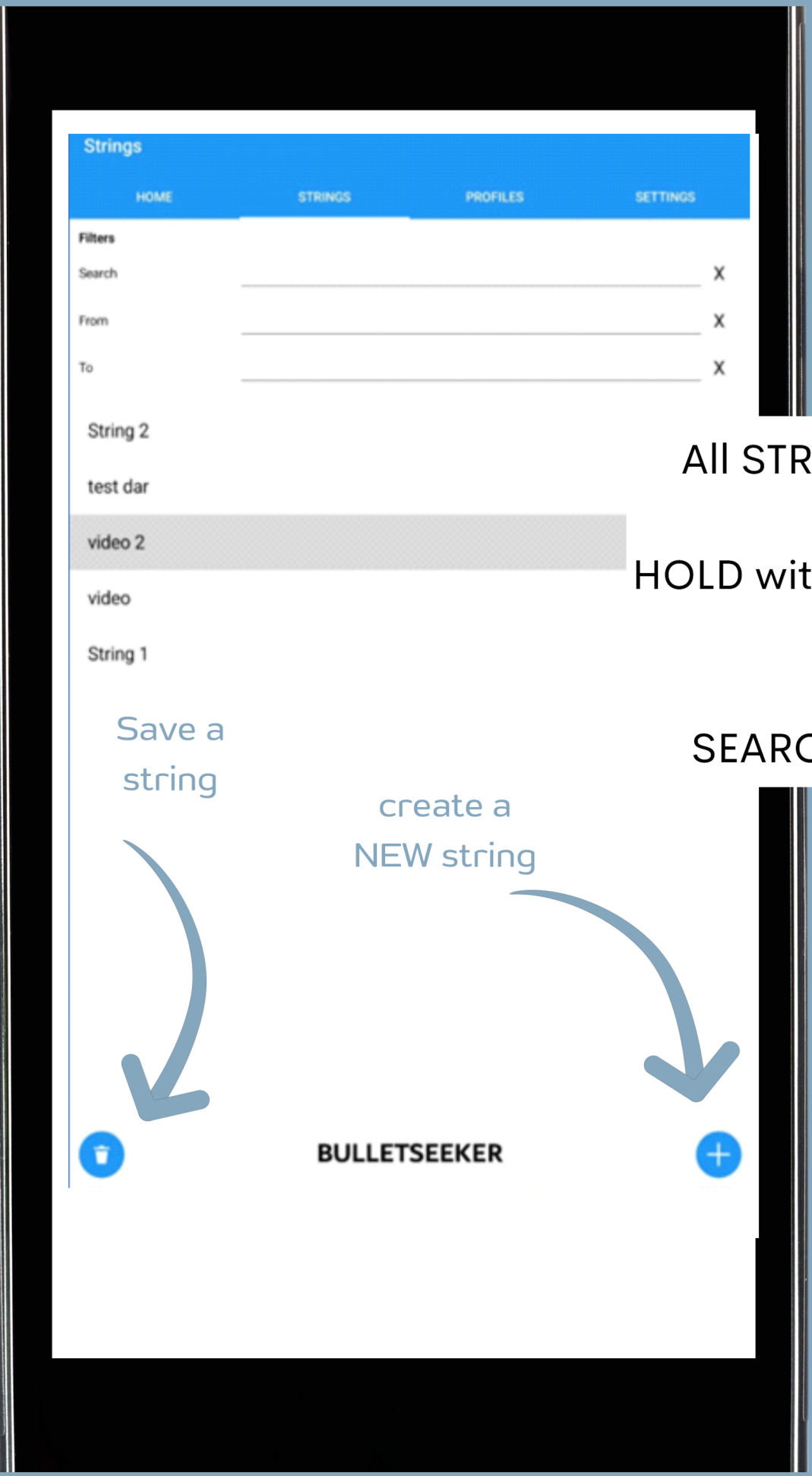
M4



All STRINGS are listed

HOLD with finger to OPEN a STRING

SEARCH using FILTER

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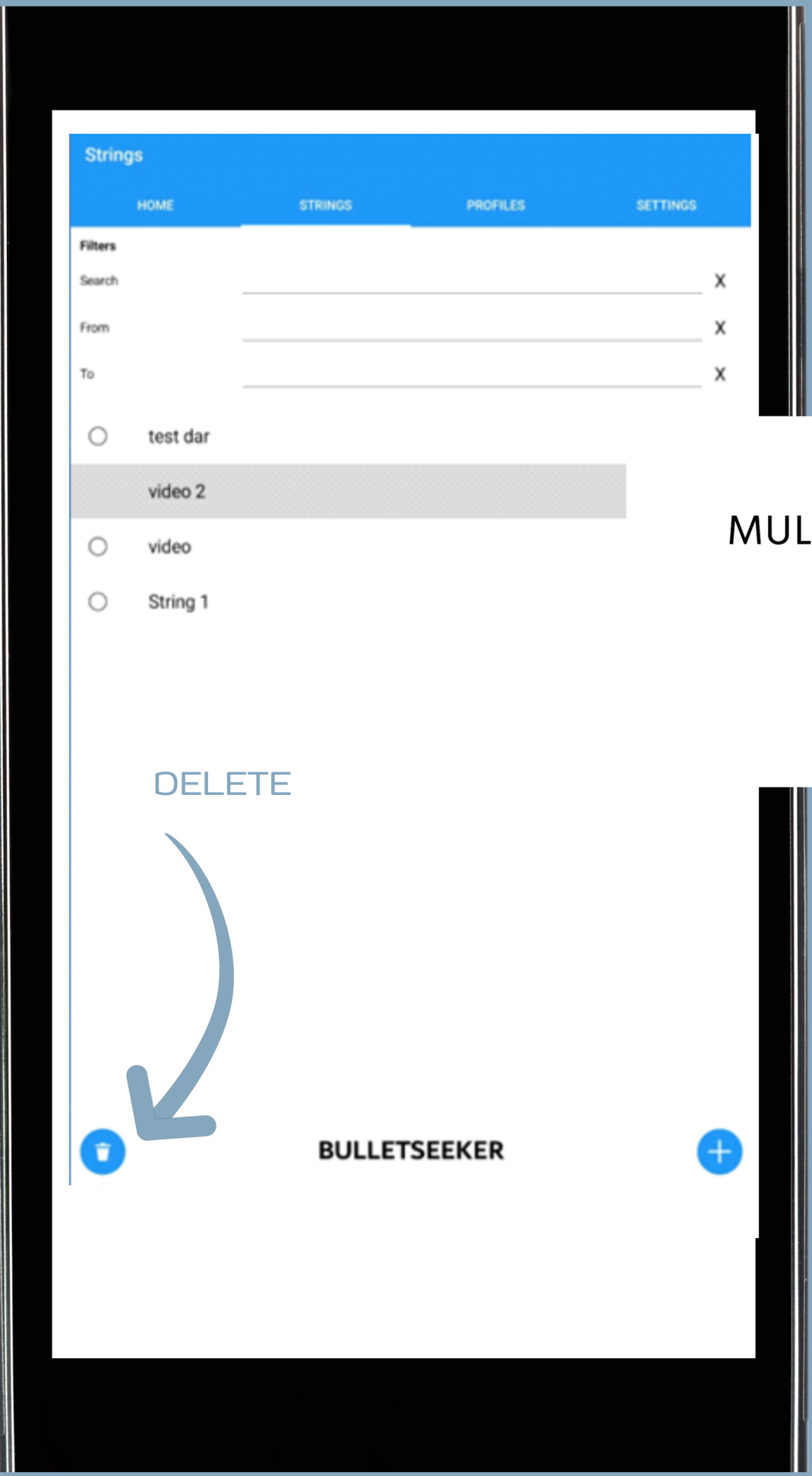
M4



MULTIPLE DELETE

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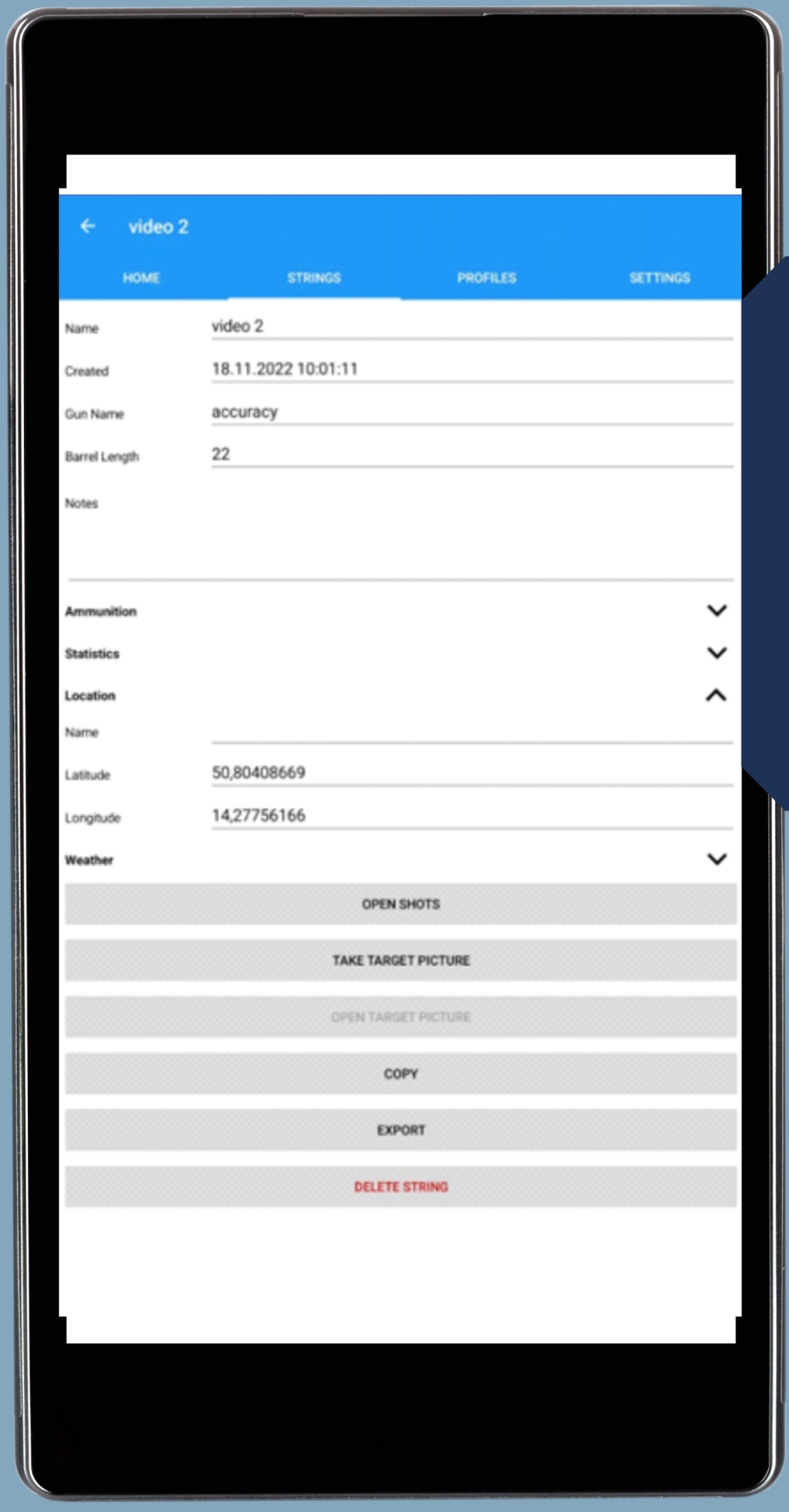
M4



If you copy a string, the current data (rifle, barrel length, ammo, etc.) remains
However the shot data is overlayed

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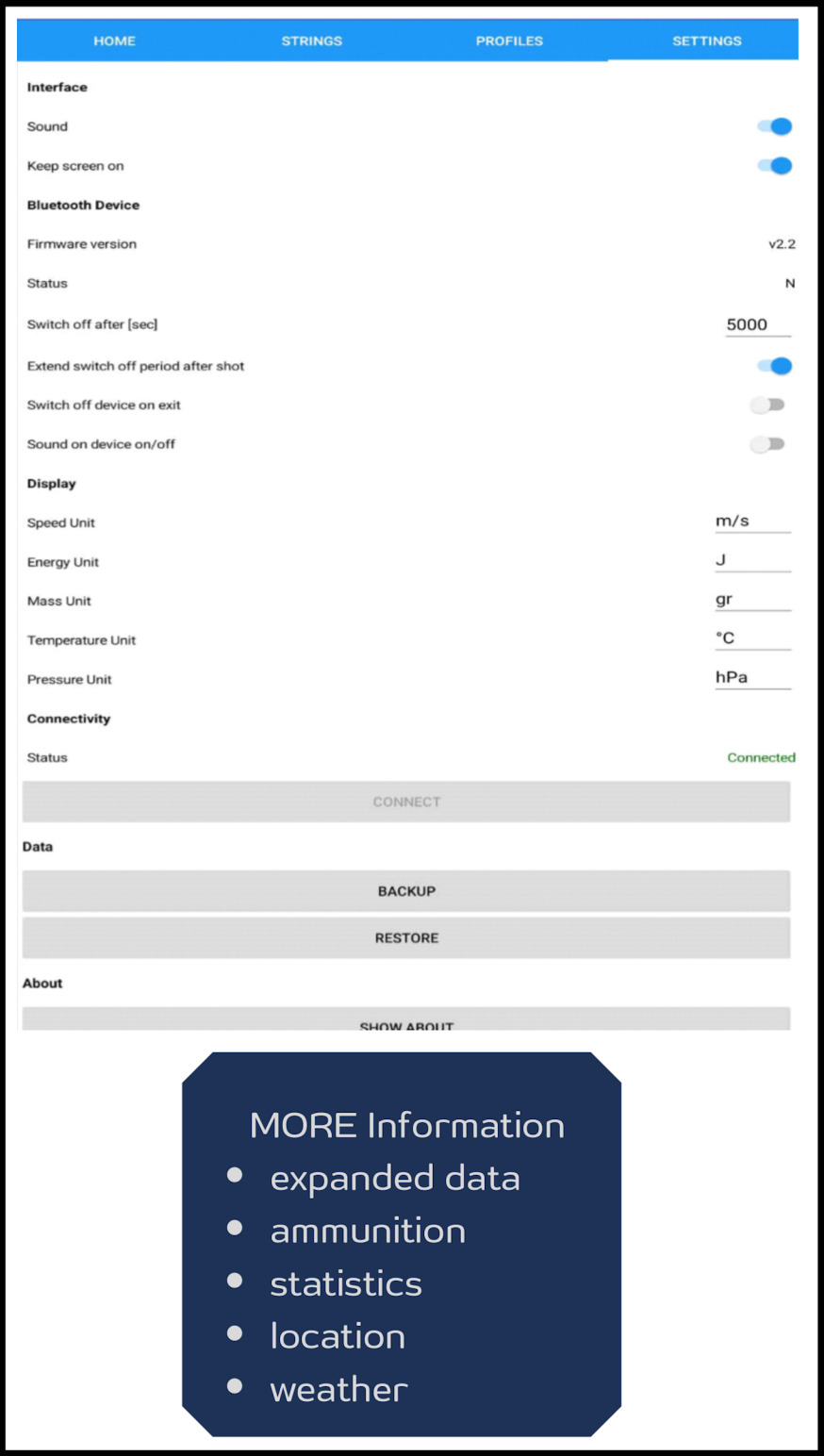
M4

Customize and edit each row
to your preference



MORE Information

- expanded data
- ammunition
- statistics
- location
- weather

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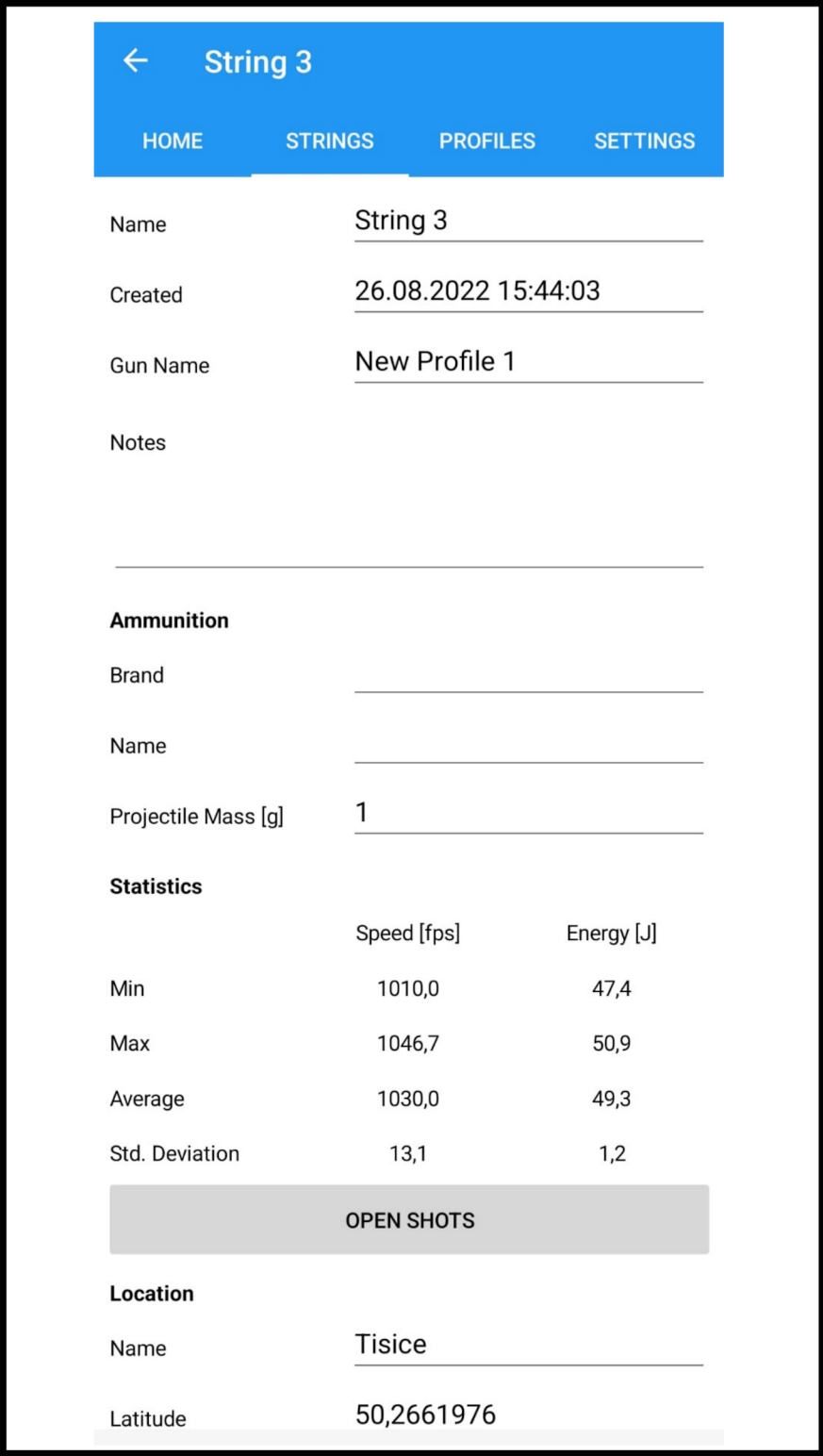
M4

Customize and edit each row
to your preference



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STRINGS screen
if you have pressed OPEN SHOTS

M4

You can edit or delete each single shot, press anywhere on the line

If you presse the DELETE button

- another window will open.
- here you can select shots to be deleted

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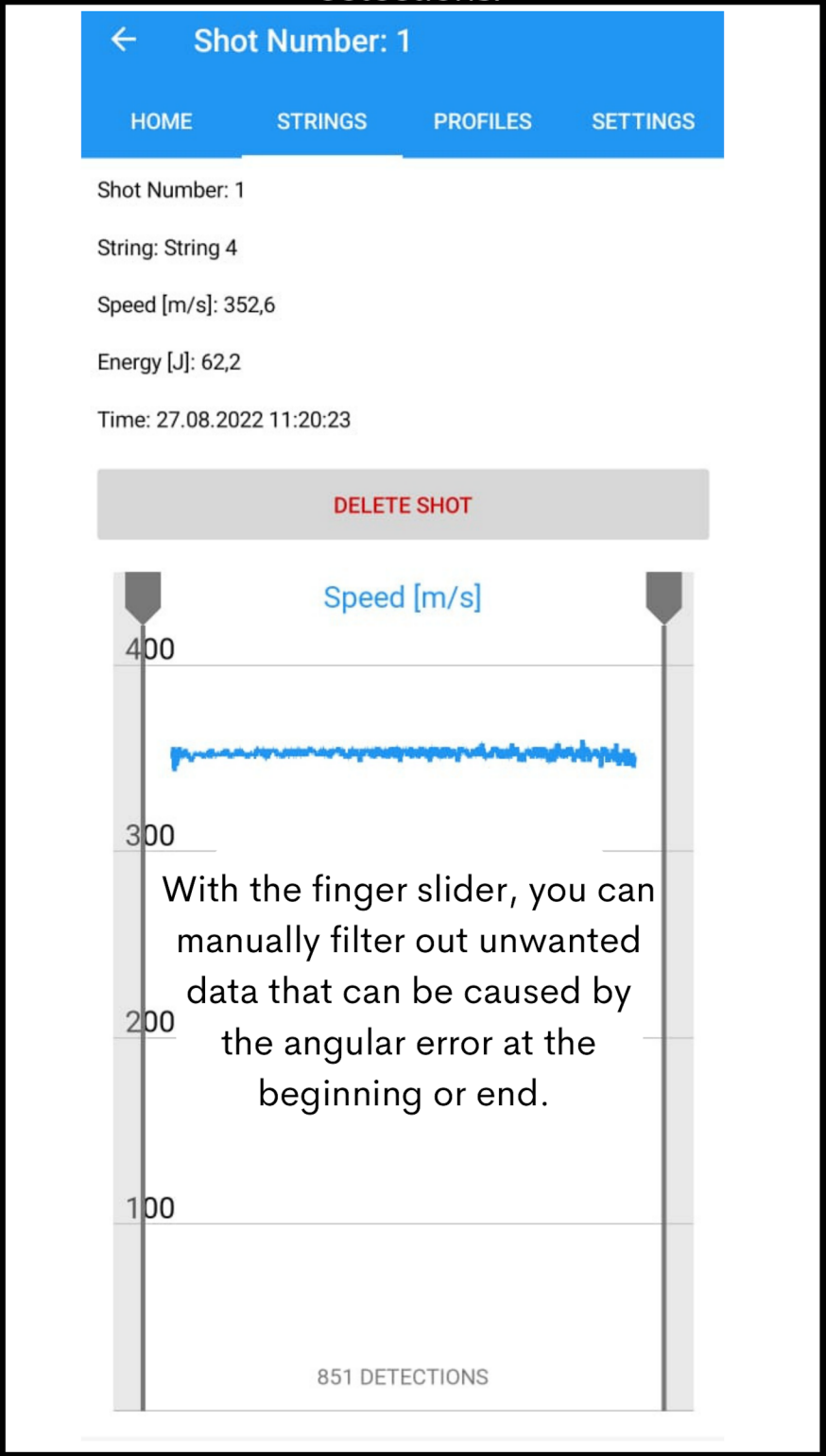
M4

The graph shows every single detection of the shot. The average speed is determined from these detections.



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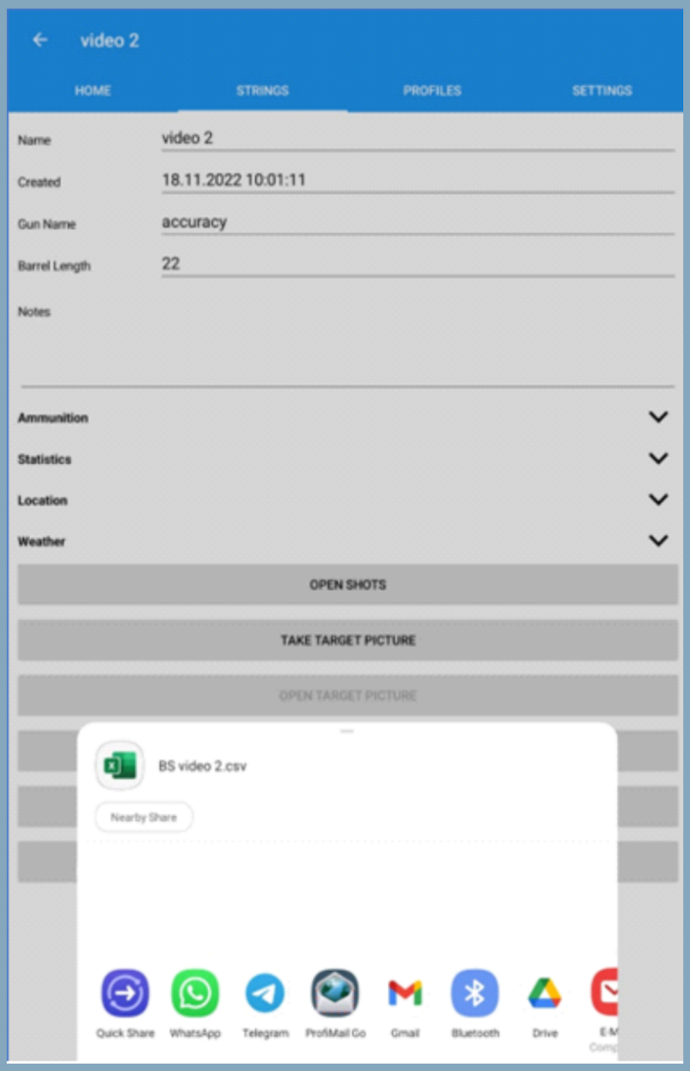
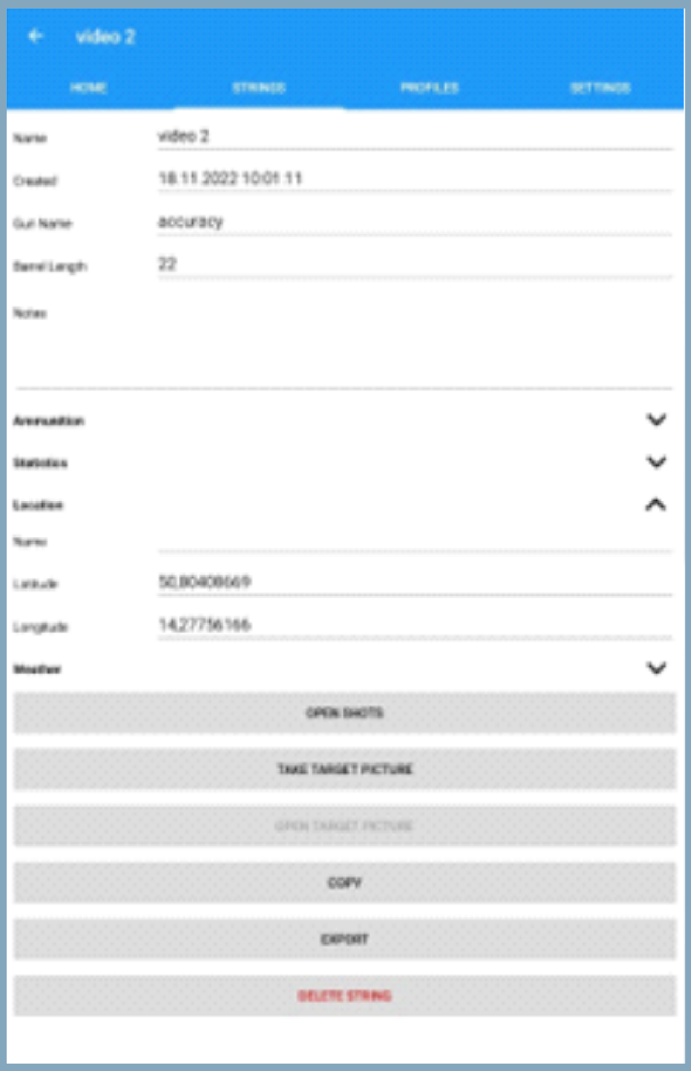
If you want to export your data, a popup window opens with a variety of export options.
The format is .csv for use in spreadsheets.
The name is editable.

M4





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M4

HOME screen

- Press CONNECT for Bluetooth pairing
- After the shot, data will be shown on the screen

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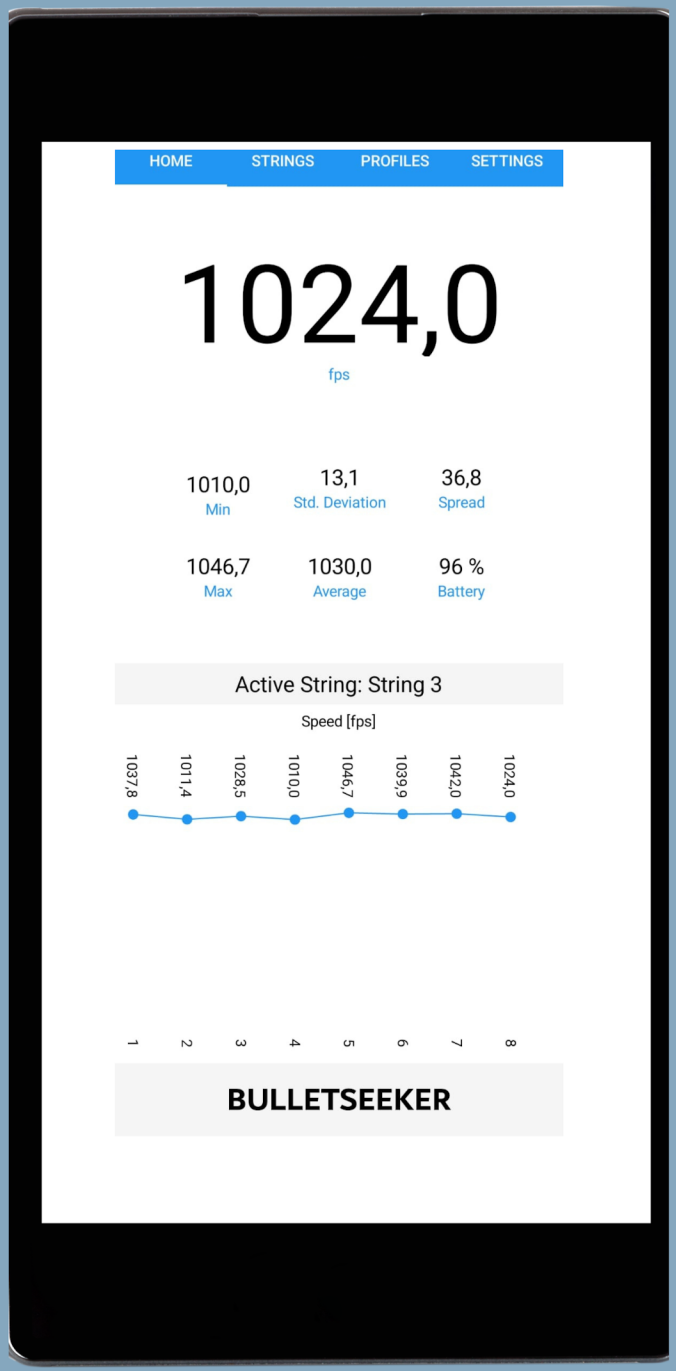
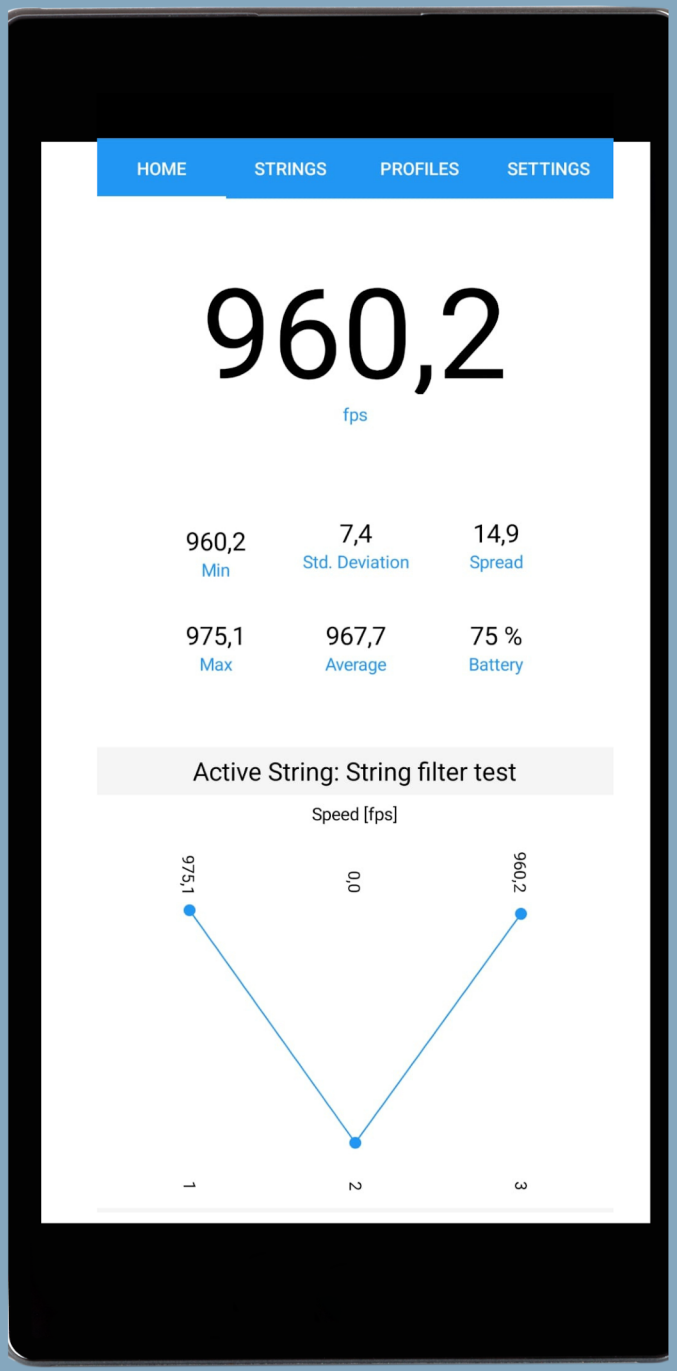
MORE Examples

HOME screen

- Press CONNECT for Bluetooth pairing
- After the shot, data will be shown on the screen





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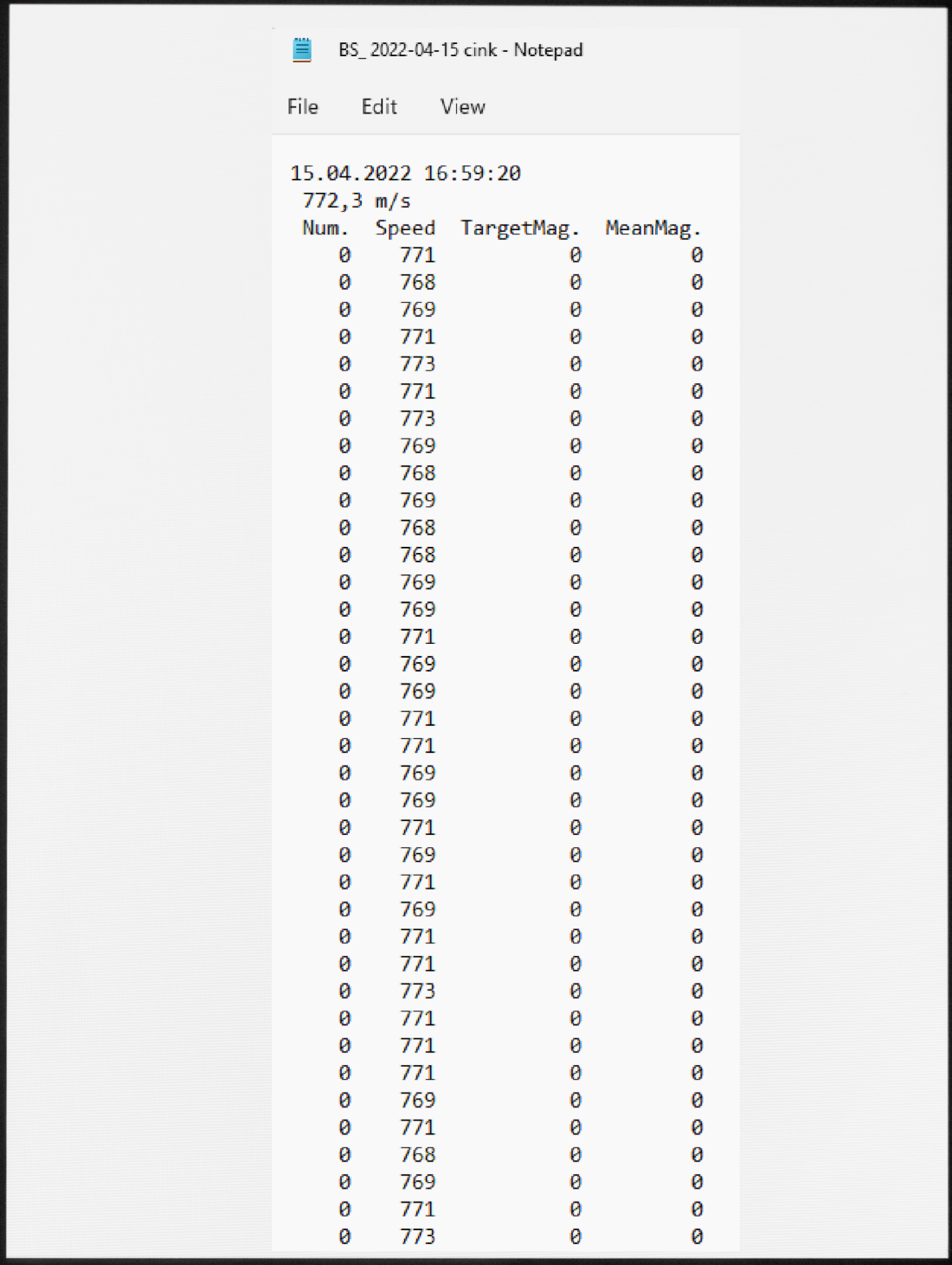
EVALUATE DATA

M4

The .csv is transferred directly to your spreadsheet
You can export this file into Excel or other Format



BS_ 2022-04-15 cink - Notepad

File Edit View

15.04.2022 16:59:20
772,3 m/s

Num.	Speed	TargetMag.	MeanMag.
0	771	0	0
0	768	0	0
0	769	0	0
0	771	0	0
0	773	0	0
0	771	0	0
0	773	0	0
0	769	0	0
0	768	0	0
0	769	0	0
0	768	0	0
0	768	0	0
0	769	0	0
0	769	0	0
0	771	0	0
0	769	0	0
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0	771	0	0
0	769	0	0
0	771	0	0
0	771	0	0
0	773	0	0
0	771	0	0
0	771	0	0
0	771	0	0
0	769	0	0
0	771	0	0
0	768	0	0
0	769	0	0
0	771	0	0
0	773	0	0

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FOR INSTRUCTORS, DEVELOPERS OF WEAPONS & AMMUNITIONS

M4

A special APP version with additional data such as signal strength etc. can be ordered

BS_ 2021-12-01 hsv19 calc corrected.txt - Notepad

File Edit Format View Help

12/1/2021 5:09:24 PM
814.9 fps

Num.	Speed	TargetMag.	MeanMag.
19038	242	73	0
19	238	82	2
16964	242	78	2
20	240	110	2
15682	240	98	2
20	240	152	3
12888	238	144	3
20	242	184	3
11774	238	174	4
20	242	188	4
12902	240	212	4
20	248	193	4
15660	245	212	4
20	247	182	4
21176	245	222	4
20	242	164	4
15005	248	202	4
21	247	205	4
18326	248	185	4
20	248	194	4
21014	250	146	4
21	250	176	3
12413	250	138	4
21	253	122	3
17712	247	112	3
21	253	82	4
26936	252	85	3
21	242	72	3
30410	263	78	2
21	263	76	2
32186	265	92	2
21	267	84	2
30545	267	73	2
21	263	89	2
0	260	85	2
0	265	100	2
0	262	110	2
0	268	78	3
0	267	109	2

In the first two rows are the date and the average speed.
In the first column are counter of detections from airguns.
In this version there are radar detection values to generate a fine detection calculation. This is for radar developer use only.
The second column shows the speed at each detection.
The third and fourth column show the data with the quality

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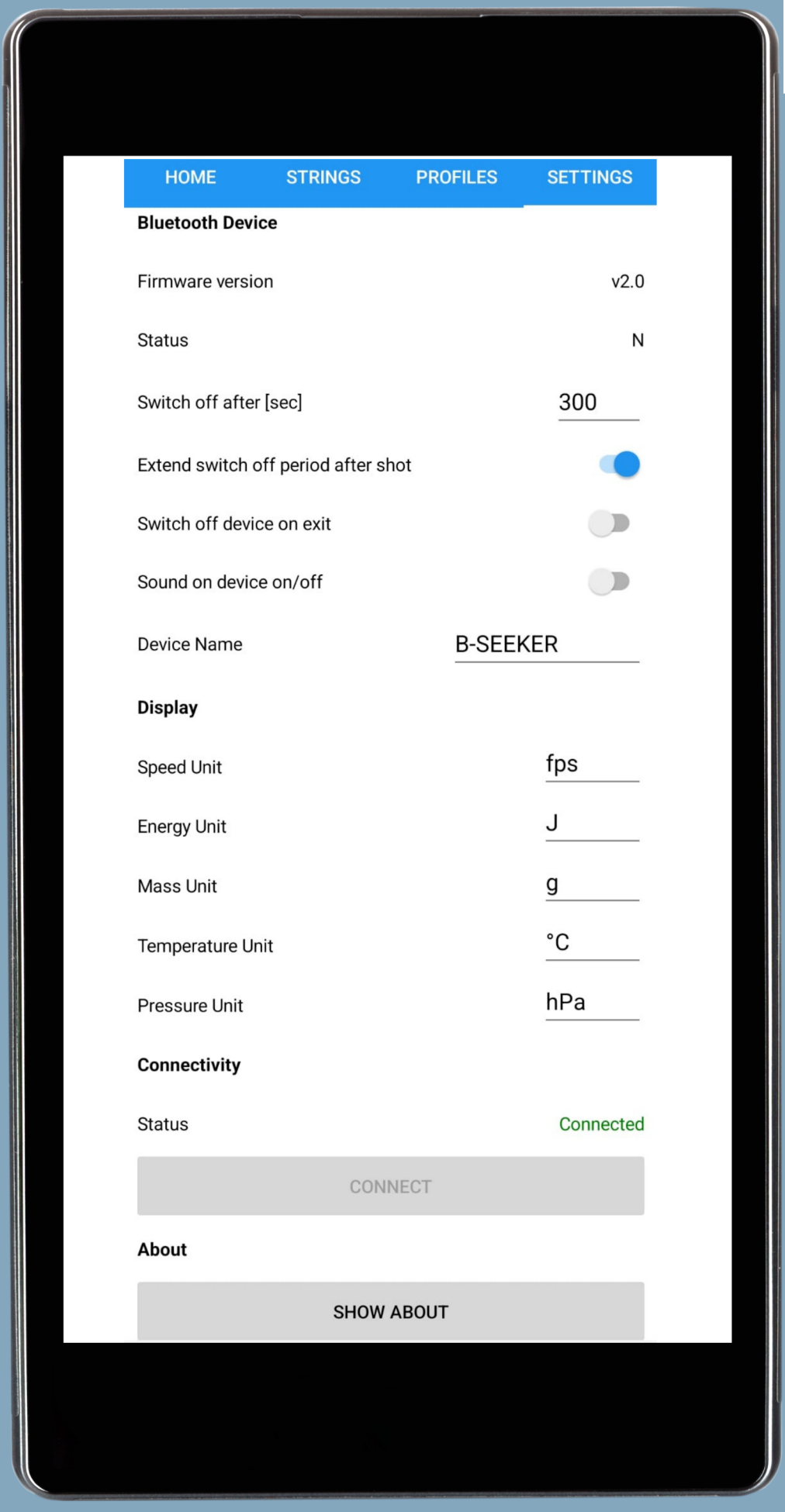
5. Settings

M4



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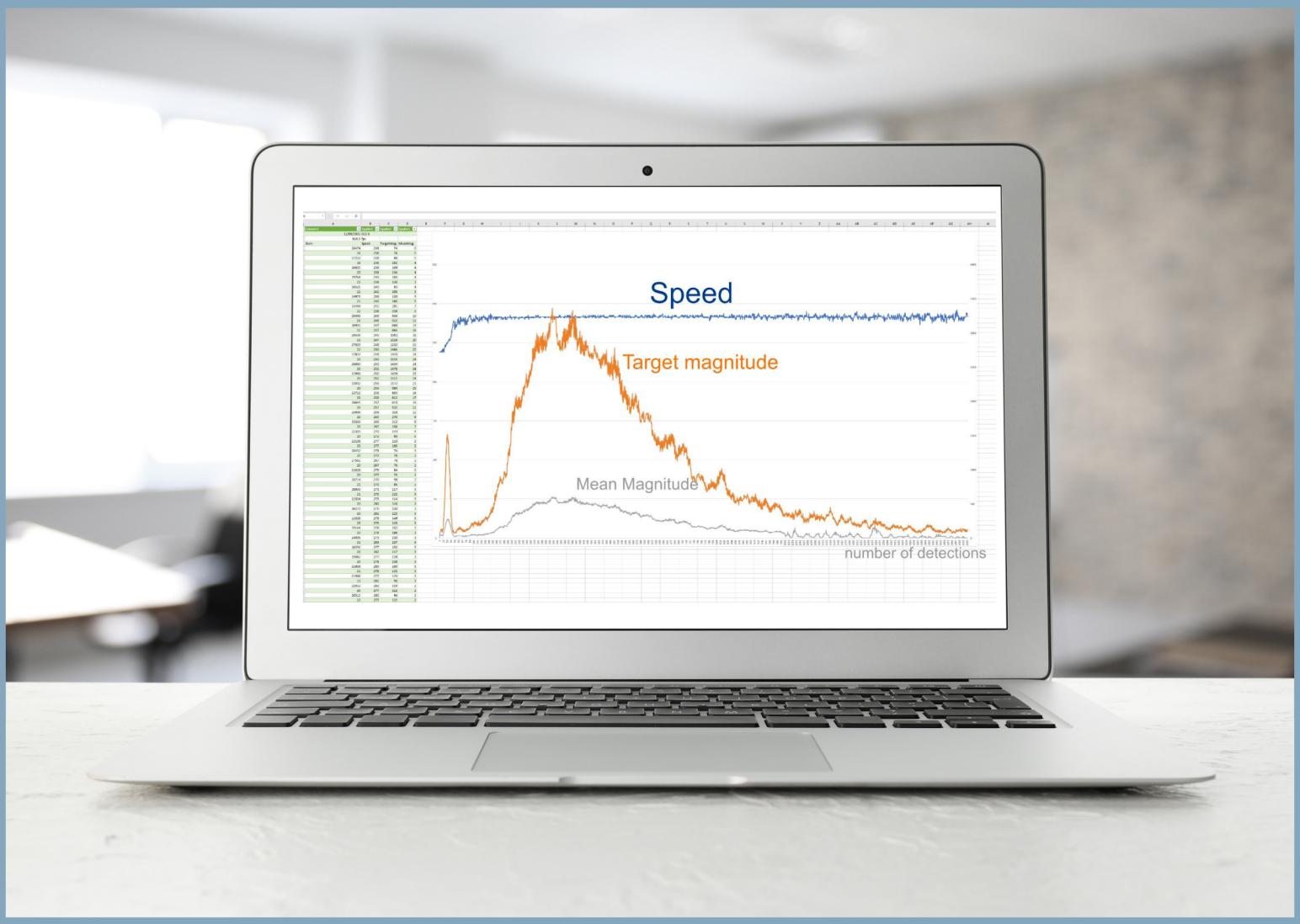
EXAMPLE OF DATA EXPORT TO EXCEL



AS DESCRIBED IN "POSITIONING" The rising points on the graph start at the beginning of the shot

BULLETSEEKER detects and measures each shot in the first 80 cm and thus delivers the real V0

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DATA PROCESSING

Data processing is fully automatic

1. All of the data transferred can be saved to your mobile phone and processed by yourself as well.
2. Data is saved in the folder "DOWNLOADS"

- file name "BS + time stamp" as a .log file, readable with a text editor
- The file name is a proposal only, You can rename it.

3. The angle γ between BULLETSEEKER and muzzle is important

- falsifies the results of the first 3-10 detections
- (first 10 cm) per shot
- The initial speed is measured in the first meter

4. You can evaluate and correct the data.
5. In the app you can manage the data by scrolling with your finger tip
6. In addition,

- All of the data / shots are stored in an internal database
- You can call them up again

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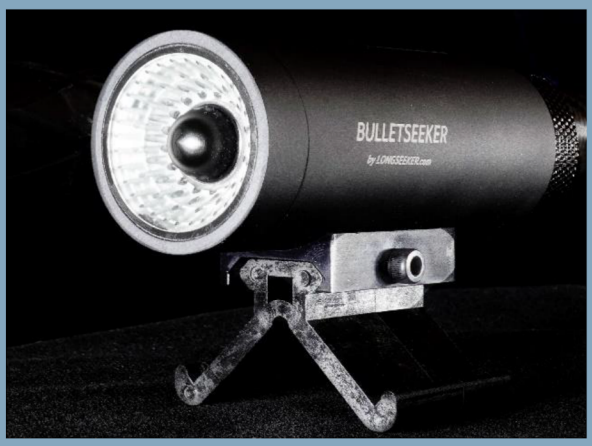
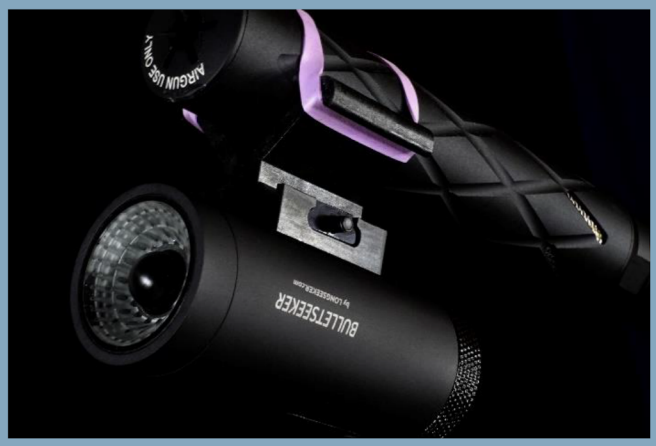
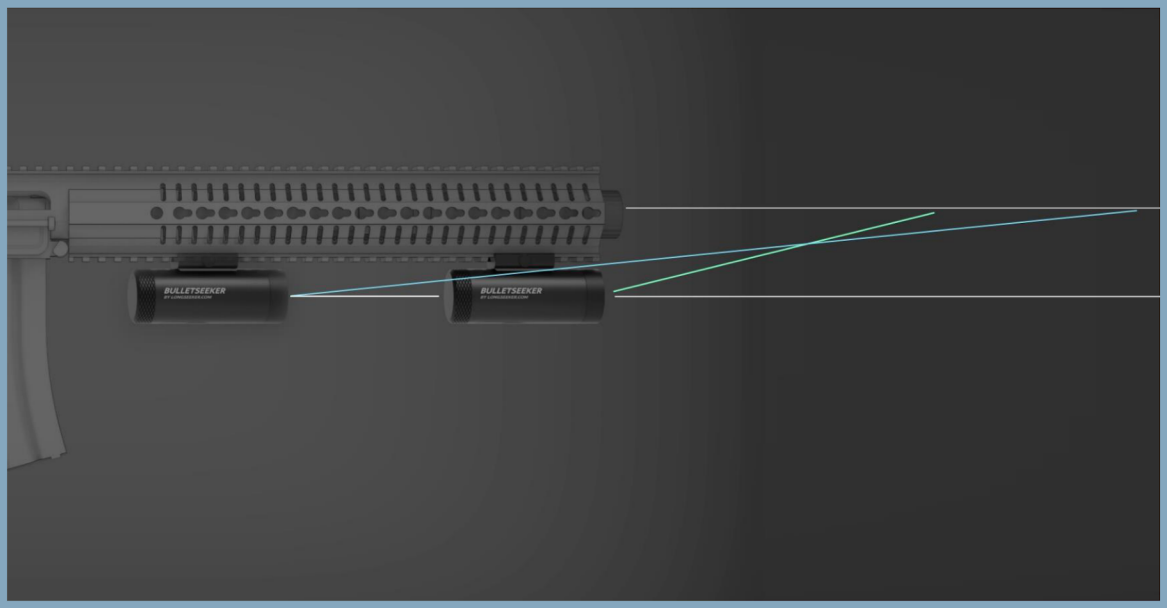
MOUNTING

- The Picatinny rail counterpart is mounted on the BULLETSEEKER
- A universal V-holder is included with your BULLETSEEKER
- A quick click adapter for Picatinny rail is also included in the delivery or your BULLETSEEKER
- it can be attached to the barrel with an elastic band or stand alone beside the gun

*** If you require more than one v-holder or quick click adapter to easily switch between firearms, they can be purchased as accessories ***







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POSITIONING

- Beware of radar shadow
- Closer to the muzzle is better
- Find the right position on your gun by testing
- Beam forming is set to 22 degrees at mid lens
- Do not cover the lens and the aluminium foam filter

FOR MORE TIPS
JOIN OUR
MEMBERS ONLY
FORUM

WWW.BULLETSEEKER.COM/FORUM

PHOTO CREDIT: Michael Andrew Photography

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POSITIONING

Explosive ammunition creates a muzzle cloud from hot gases and metallic abrasion.

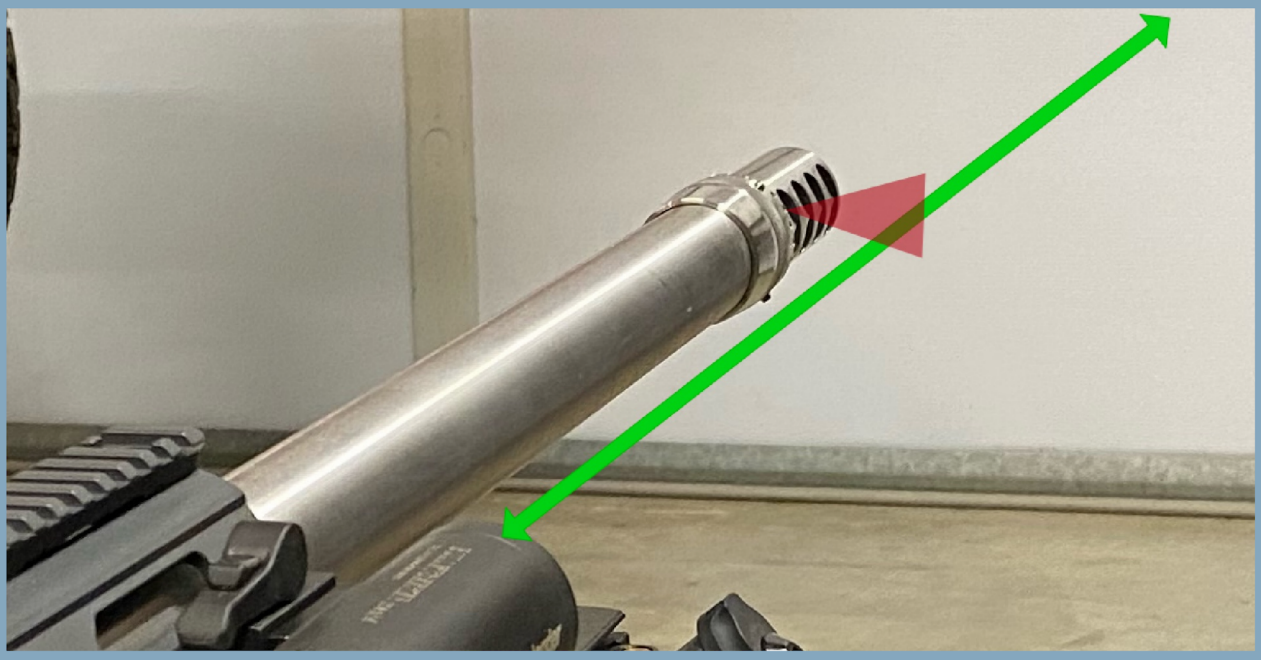
This cloud of plasma and metal splinters is electrically conductive.

It can interfere with the radar waves and wipe out the signal. We have tested several different muzzle brakes. Each one has it's own sweet-spot.

Muzzle brakes with a guided gas jet such as star or spiral shape allow the radar signals to pass through very well.

BEST PRACTISE

Find the right position on your gun by testing.



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POSITIONING

In this case we used a smaller Picanntiny connector -4mm smaller - and the BULLETSEEKER is closer to the barrel and detected the shot.
Another possibility is to turn away from the brake openings.

ANOTHER OPTION

Start with a tripod. Mount the BULLETSEEKER on a tripod. Make a few systematic positioning tests - Find a detection position and then move the BULLETSEEKER backwards to find the ideal mounting position

BEST PRACTISE

Find the right position on your gun by testing.

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POSITIONING
Best Practise

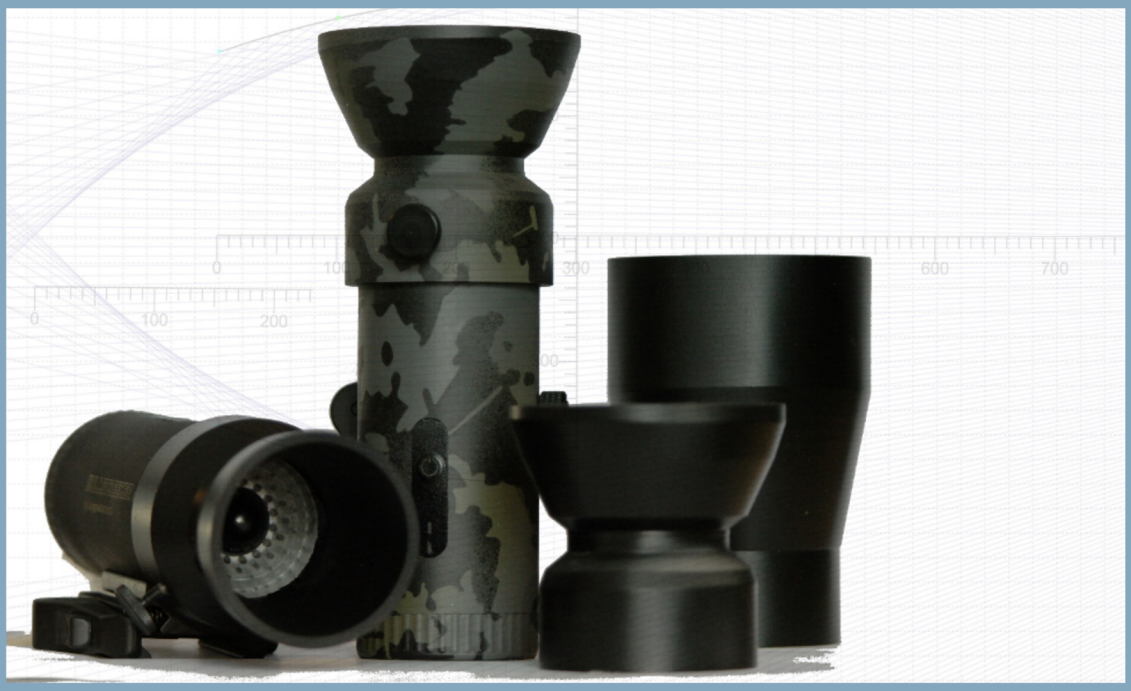
You can improve the position easily with slight adjustments and by looking at the number of detections per shot. More is better.
Mount your BULLETSEEKER parallel to the barrel, lateral distance max. 15 cm / 6 " and max. 60 cm / 24 " behind the muzzle brake.
These distances can be increased with the parabolic adapter.
Due to the large number of combinations of weapons, ammunition and possible positions, we cannot give any general recommendations. Try out different positions and optimize this with the help of the number of detections

BEST PRACTISE

Find the right position on your gun by testing.

ParabolicAdapter

Usually we measure in the first meter. In the case of problematic muzzle clouds, however, the signal is blocked and with the adapter we can see up to 3m - i.e. behind the muzzle clouds.
Due to its parabolic shape and larger diameter, the parabolic adapter carries more signal to the receiver.
The diameter is chosen to be smaller than the size of the BULLETSEEKERS+click adapter. So no assembly problem.



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PARABOLIC ADAPTER

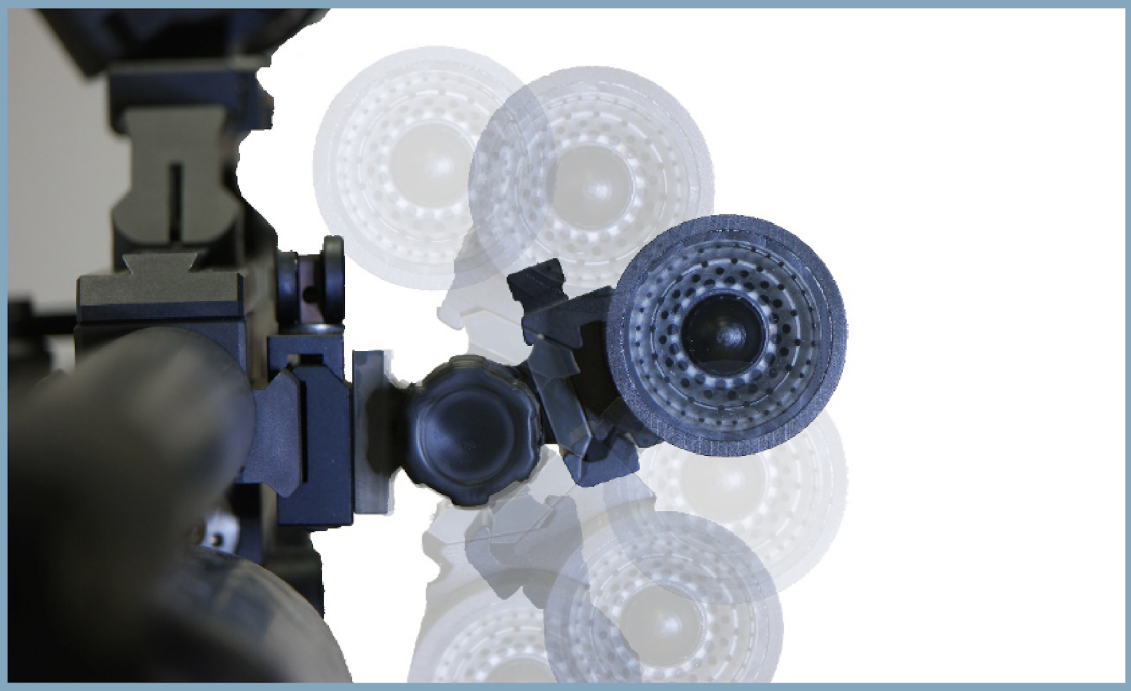
For unique situations we have developed an attachment adapter.

The parabolic antenna adapter

With this adapter the BULLETSEEKER also receives signals from behind the plasma cloud.

Often used in applications where the ammunition rounds are 7mm or larger.

Using the adapter will enable the BULLETSEEKER to see 3 meters in front. This will give you more detections.



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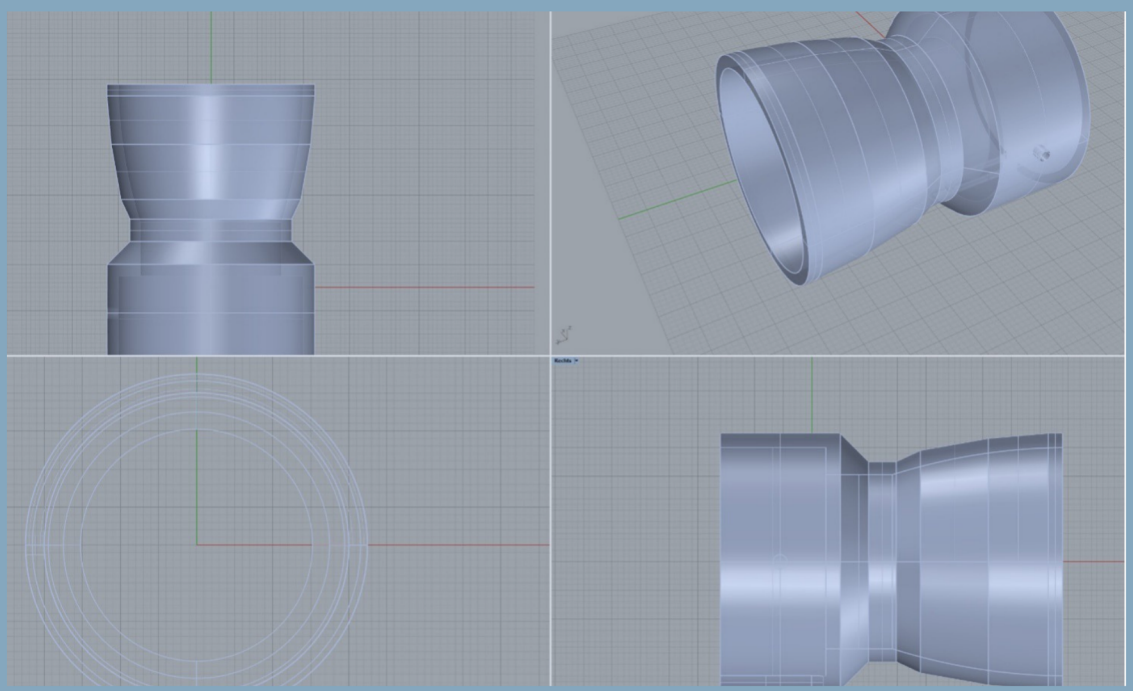
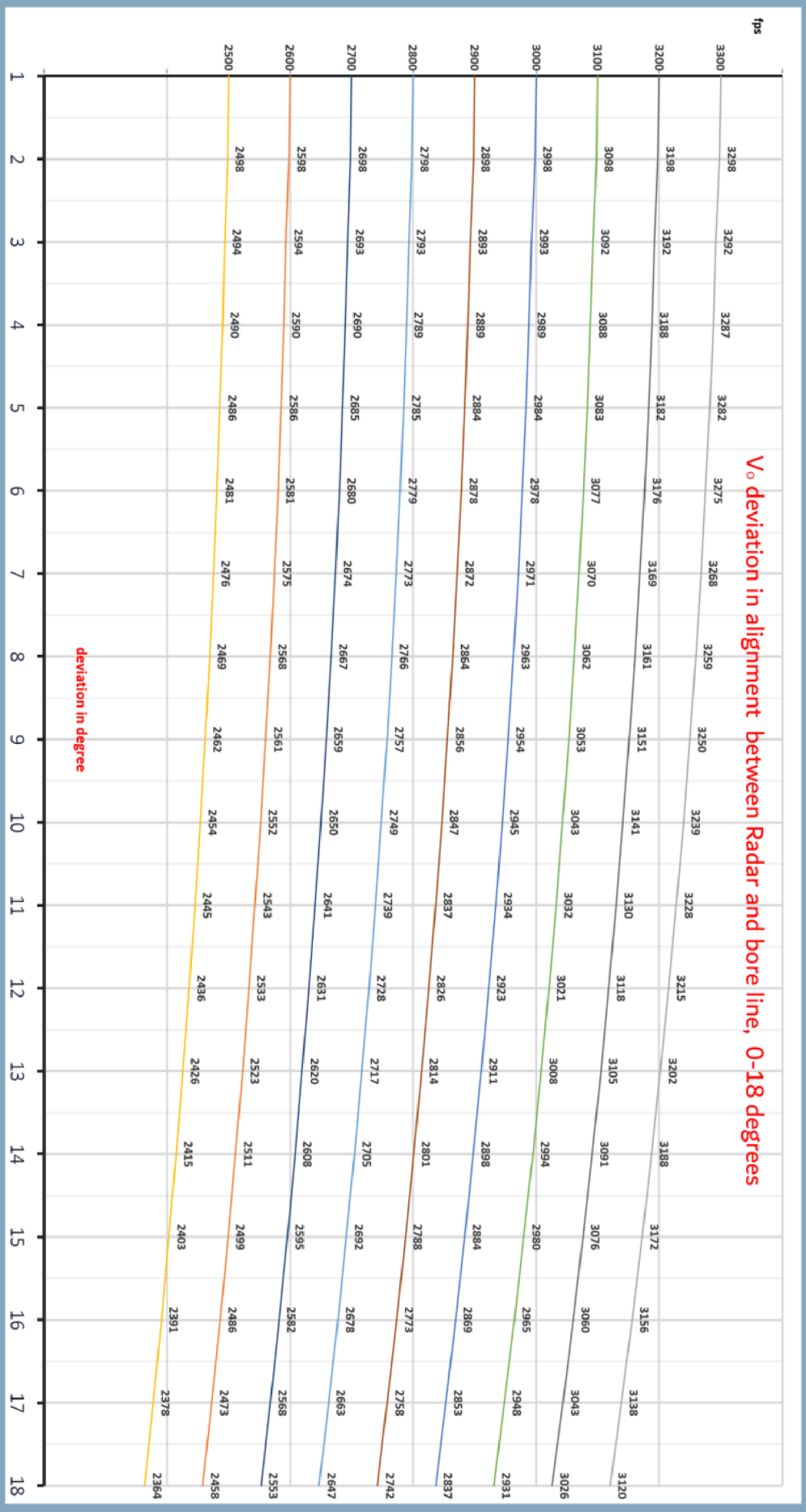
6. ACCESSORIES

The Swing Adapter is to enable stepless position adjustment.

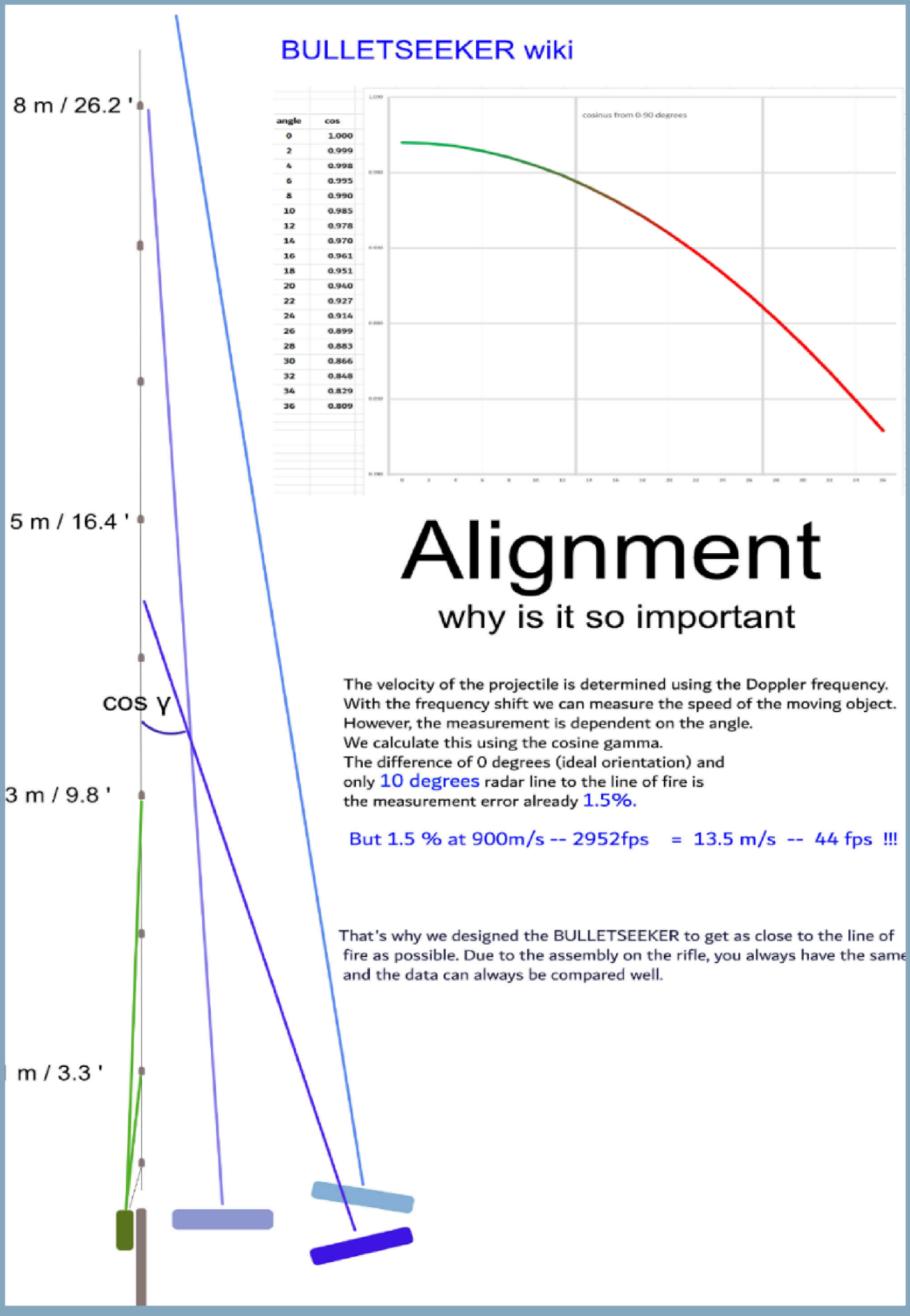
By rotating the BULLETSEEKER on the mount you can make picro adjustments once you have the distance figured out.



MORE RESOURCES



ALIGNMENT – Why it's Important!



Notice for USA

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.

Unauthorized modifications may void the authority granted under Federal communications Commission Rules permitting the operation of this device.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of
the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful
interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Notice for Canada

Operation is subject to the following two conditions:

(1) this device may not cause interference, and

(2) this device must accept any interference, including interference that may cause undesired operation of the device.

Usually this is followed by the following RSS caution:

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes :

(1) l'appareil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

1. PIN : NOT REQUIRED If you are being requested for a PIN contact us (PIN 224466, NEWER versions no long require a PIN)

2. Out of range: shot detected but out of presets in speed and / or sensitivity

3. Bluetooth connection problems: with Android 12 there is a problem identified by a few Samsung phones owners

Try this:

a) Switch off / on the Bluetooth on your phone and try to connect again or

b) Switch on for a minute the airplane mode, switch off and try to connect again or

c) Connect the BULLETSEEKER with the phone via Settings - Connections - Bluetooth, pairing then switch over to the BULLETSEEKER APP - press connect in the HOME screen. **Connecting via the phone settings always works**

4. Automatically saved data strings: BULLETSEEKER APP has an integrated databank and is saved on your phone

5. Data backed up manually: saved in the download folder with the name ''BS_time stamp.txt''

Time stamp format YYYY-MM-DD-HH-MM-SS

6. Detections are displayed without shooting: The battery voltage has dropped too far - recharge the BULLETSEEKER.

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7. Partial detection only: This is a positional issue caused by a radar shadow or cloud of fire. A change in position is required. Good control is seen in the number of detections. STRINGS screen - Open shots - `open single shot with finger press - Count # of detections in the lower part of the graph.

More detections - better position. Another option is to use the parabolic lens adapter or mounting rails for easy position improvement.

8. No or Partial Detection: Turn off ALL Bluetooth connections except the BULLETSEEKER connection. Check if other electrical or electronic devices in the immediate vicinity are interfering with the radar signal.

9. Battery: 4 hours of continuous use. 2 hours charging.

10. BLUETOOTH Connection issue: If you have paired your BLUETOOTH device with the BULLETSEEKER and it is not working. It may be in the background and it is important to note that the foreground APP has the priority. In principle, several BLUETOOTH connections are possible with one device. However, usually only one is active. If there are two tools (BULLETSEEEKER and another) connected to your device through BLUETOOTH, a conflict is identified. Make the BULLETSEEKER the priority APP.

BULLETSEEKER®

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QUESTIONS?
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BULLETSEEKER
is developed, manufactured and produced by Longseeker sro

Certified with:
CE
FCC