



USER MANUAL

EDITED:
SEPT 23, 2019

Volume 1

TABLE OF CONTENTS

1. INTRODUCTION	3
2. LAYOUT	4
3. OVERVIEW	5
4. INSTALLATION / FAQ	6 - 7
5. NAVIGATING THE FUSION	
a. JOYSTICK	8
b. Main screen - MATRIX	8
c. FAVORITES	8
d. MAIN MENU	9
i. BANDSCAN	9
ii. SETTINGS	9 - 10
iii. QUAD FIND	11
iv. MULTILOCK	11
v. LAPTIMER	11
vi. AUTO LOCK	11
6. SUPPORT	12

INTRODUCTION

If you are reading this, you probably just purchased the best goggle module in the world, the TBS FUSION, which was a collaboration with the nerds over at BrainFPV, the magician behind Achilles FPV, and the sexy unicorns over at Team Blacksheep. We know you are super excited to get started. So, before you start plugging stuff in, we all just wanted to say “thank you” for being amazing and supporting our endeavour to help make your flight better!

WITHOUT FURTHER ADO...

LET'S GET MAGICAL

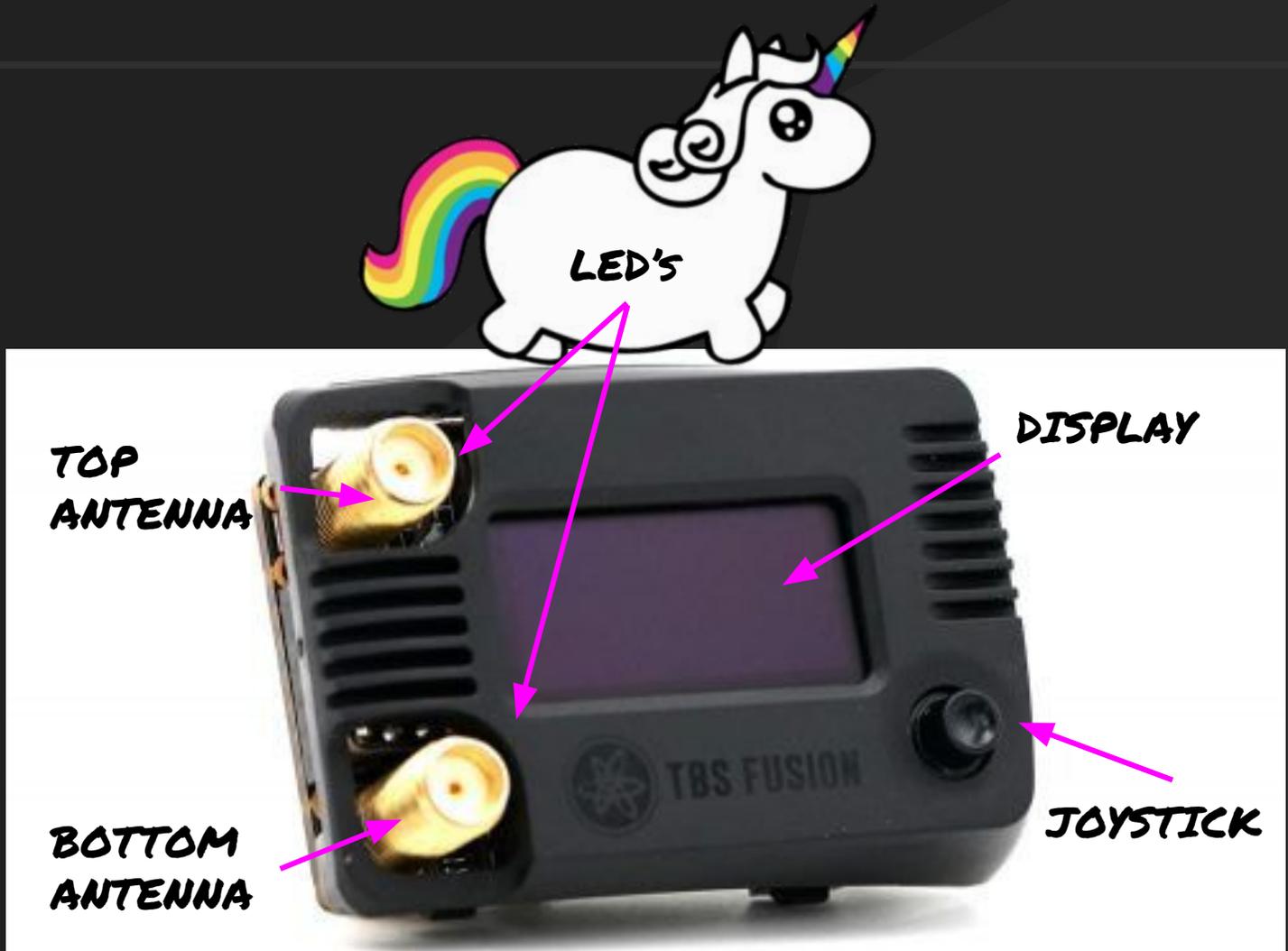


TBS FUSION

FPV GOGGLE MODULE



LAYOUT



ANTENNA CONNECTORS: Connect SMA antennas here. Some Stubby Antennas will need an adapter to fit. But don't worry, we included a right angle adaptor in the box.

DISPLAY: OLED display showing status information and menu. The same information is also shown in your goggles on-screen display (OSD).

JOYSTICK: 5D joystick to navigate the menu etc. Center press is "enter".

LED'S: Shiny blue LED's showing which antenna is being used. Yes, sometimes both are on, as Fusion uses both antennas when both signals are good #trappicornmagic



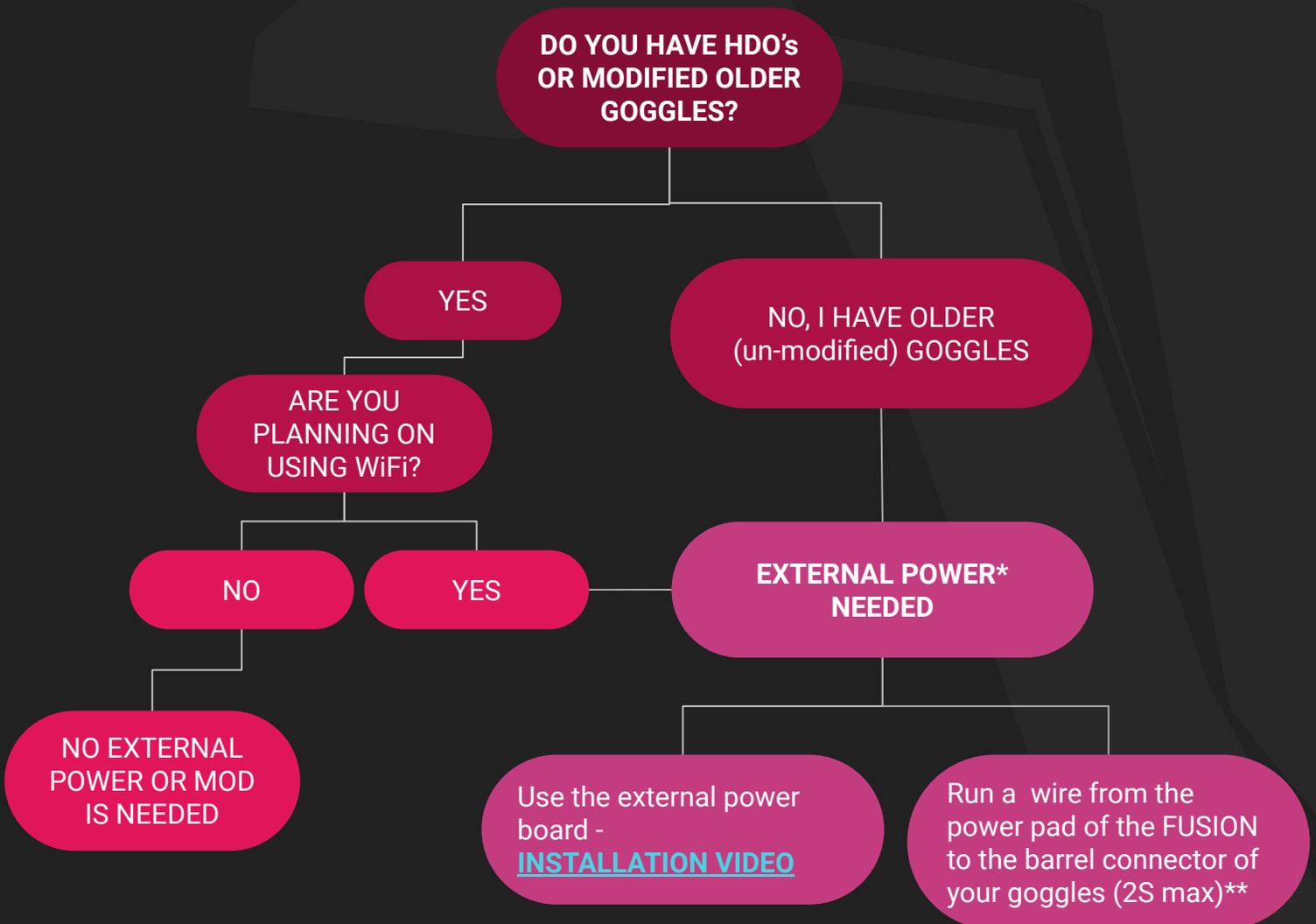
OVERVIEW

5.8 GHZ BANDS	Fat Shark, RaceBand, A, B, E, Favorites
ANTENNA CONNECTORS	SMA
OPERATING VOLTAGE	5.0V - 8.4V (2S)
POWER CONSUMPTION	WiFi off: 5V: 380 mA, 8.4V: 270 mA WiFi on: 5V: 440 mA, 8.4V: 320 mA
DISPLAY	64 x 128 pixel OLED (blue)
LED'S	2 blue LED's indicating active antenna
JOYSTICK	5D joystick for navigation of the UI
BEEPER	Variable frequency beeper
WIFI	IEEE 802.11 b/g/n (2.4 GHz) for TBS Crossfire connectivity
USB	Micro USB type B connector for updating using TBS Agent-X
FATSHARK GOGGLE COMPATIBILITY	Fatshark Dominator V1 - V3, HD1, HD2, HD3, HDO Fatshark Attitude: Requires trimming of goggle plastic case to fit
WEIGHT	30.5g
INAPPROPRIATE UNICORN IMAGES	Lots and lots of them

INSTALLATION DEETS

The Fusion is an advanced module and uses more power than the other modules on the market due to WiFi module used for future Crossfire connectivity. Therefore it is necessary to provide external power to the Fusion depending on your goggles and on whether you plan to use WiFi.

DO I NEED EXTERNAL POWER?

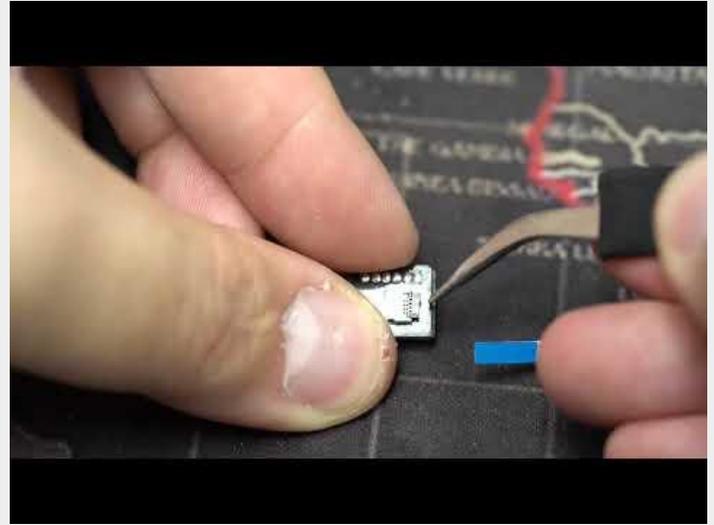


* Unlike with some inferior modules, you can still turn on/off Fusion using the switch on the bottom of your goggles when you use external power

** Fusion supports 2S maximum voltage, so don't do this if you power your goggles with 3S

INSTALLATION AND UPDATE

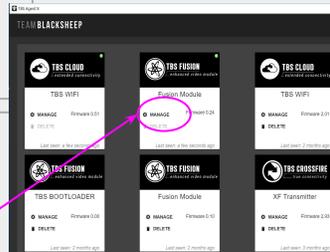
INSTALL POWER BOARD STEP BY STEP



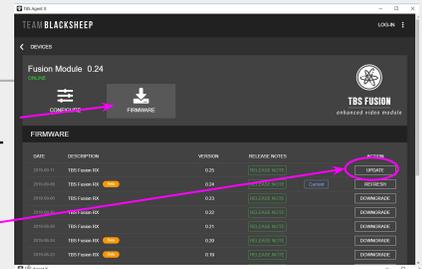
UPDATE TO THE LATEST FIRMWARE

1. Power TBS FUSION through your goggles
2. Plug in USB
3. Open TBS Agent X

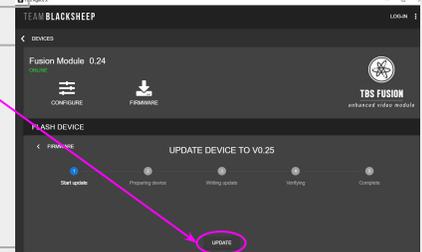
4. Find the **TBS FUSION** (green dot on top indicates that it is connected)
5. Click 'MANAGE'



6. Click 'FIRMWARE'
7. Select the LATEST VERSION
8. Click 'UPDATE'



9. Click 'UPDATE' again
10. It will reboot and flash the newest firmware!



THINGS TO LOOK OUT FOR / FAQ

In versions of TBS Agent X 2.21 and below, updating the TBS Fusion may take several attempts to work. We suggest updating the TBS Agent X.

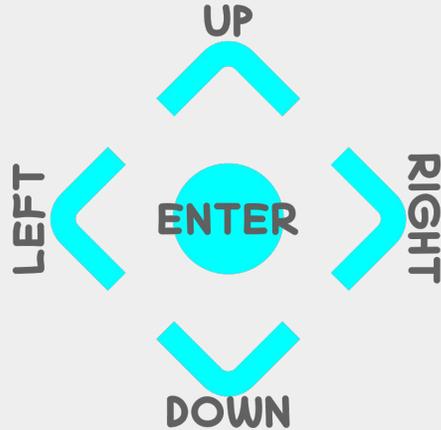
The Fusion cover is a tight fit with your Fatshark goggles. In some instances, it may require a bit of horizontal adjustment for all 4 directions of the Joystick to work.

NAVIGATING THE FUSION

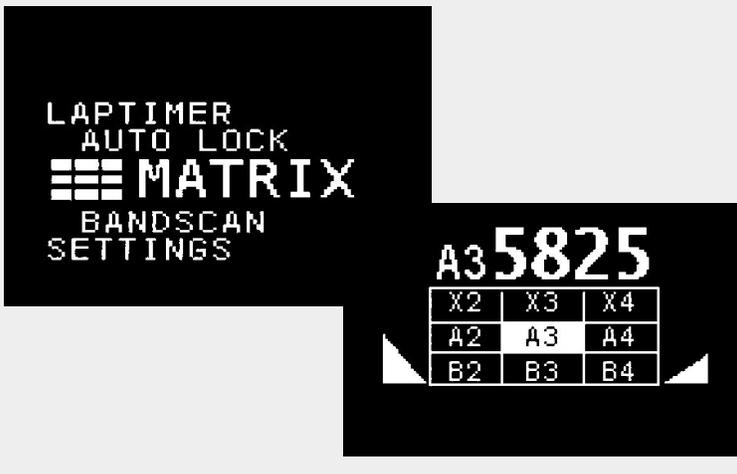
WITH YOUR FINGER, GENTLY TOUCH THE JOYSTICK FOR OPTIMAL RESULTS



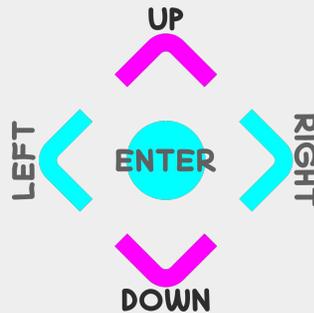
JOYSTICK



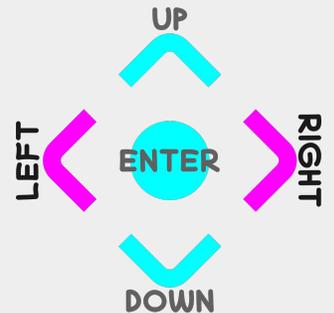
MAIN SCREEN - MATRIX



CHANGE BAND UP/DOWN



CHANGE CHANNEL LEFT/RIGHT



FAVORITES - YOU CAN SAVE UP TO 8 CHANNELS

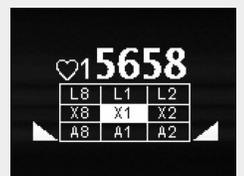
1. IN THE MATRIX, GO TO YOUR FAVORITE CHANNEL
2. LONG CENTER PRESS
3. SAVE



SAVE 15658
<EXIT>

SAVE
SUCCESSFUL

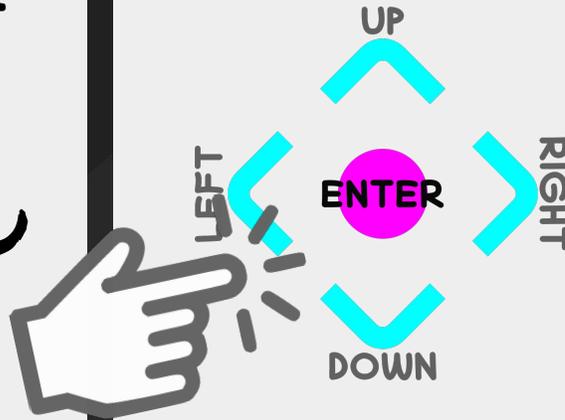
4. FAVORITE CHANNELS ARE IN "BAND X" IN THE MATRIX
5. TO DELETE, LONG CLICK ON THE XBAND.
6. YOU HAVE TO USE AGENT X TO REARRANGE THE LIST



SET AS STARTUP
DELETE
DELETE ALL
<EXIT>

NAVIGATING THE FUSION

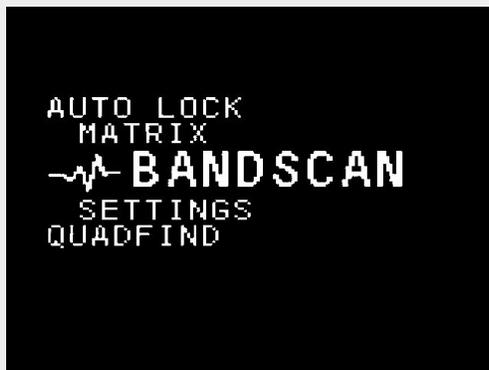
SHORT CENTER
PRESS
TO ENTER THE
MAIN MENU



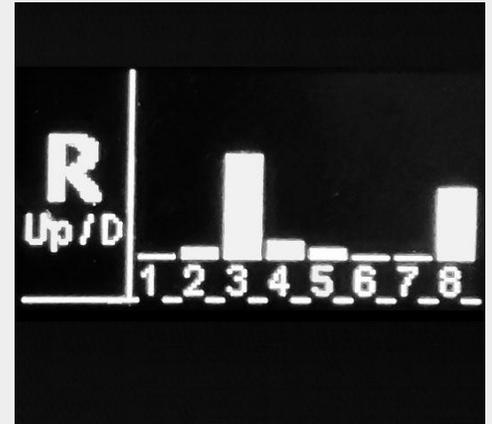
MAIN MENU OVERVIEW

- BANDSCAN
- SETTINGS
- QUAD FIND
- MULTILOCK
- LAPTIMER
- AUTO LOCK

BANDSCAN



SCANS THE
BANDS AND
DETECTS THE
BEST
CHANNELS
USE
UP/DOWN TO
CHANGE
BAND



PRESS CENTER
OR RIGHT
TO ENTER



SETTINGS

SETTINGS OVERVIEW

- SOUND
- OSD
- CRSF
- FUSION
- WIFI
- CALIBRATE
- LEFT RIGHT SWAP

NAVIGATING THE FUSION



**TURN SOUND
(ON/OFF)
-BEEPER FOR
MENU CLICKS**

OSD (ON/OFF)

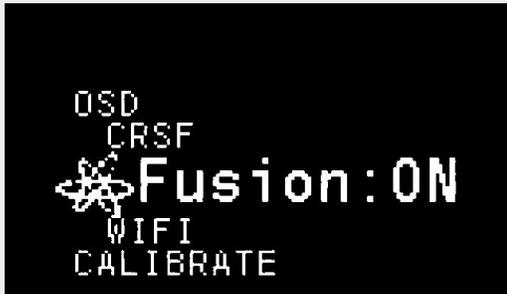
**ON SCREEN
DISPLAY SHOWS
CURRENT
FREQUENCY
CHANNEL AND
RSSI**



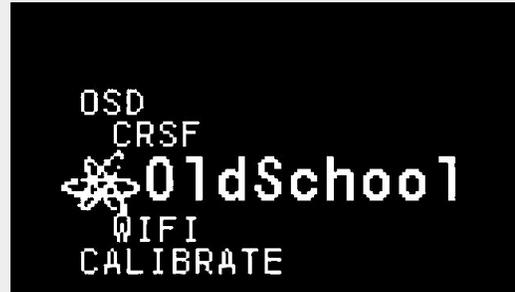
coming soon



FUSION (ON / OLD SCHOOL MODE)



**FUSES VIDEO TOGETHER AND DOES
ADVANCED SIGNAL RECONSTRUCTION**



**TRADITIONAL DIVERSITY MODE (NO SIGNAL
RECONSTRUCTION). USE AS FALLBACK FOR
CAMERAS THAT CAUSE PROBLEMS.**

WIFI (ON/OFF)

**DISABLES OR
ENABLES WIFI
MODULE
*USES LESS
POWER WHEN
DISABLED**

LEFT<>RIGHT

**YOU CAN INVERT THE
HORIZONTAL
CONTROLS, FOR EASY
OSD USAGE**

CALIBRATE

RUNS RSSI CALIBRATION

**THIS HAS ALREADY BEEN DONE IN
THE FACTORY, HOWEVER, IF YOU
NEED TO RE-CALIBRATE, PLEASE
READ THE ONSCREEN
INSTRUCTIONS.**

NAVIGATING THE FUSION

QUAD FIND

SEARCH MODE TO FIND YOUR QUAD

USES DIRECTIONAL ANTENNA AND BEEPER INDICATES SIGNAL STRENGTH GUIDING YOU TO YOUR LOST QUAD.



MULTILOCK

DETECTS UP TO + LISTS 8 ACTIVE CHANNELS



YOU CAN BROWSE THEM ONE BY ONE BY PRESSING UP OR DOWN

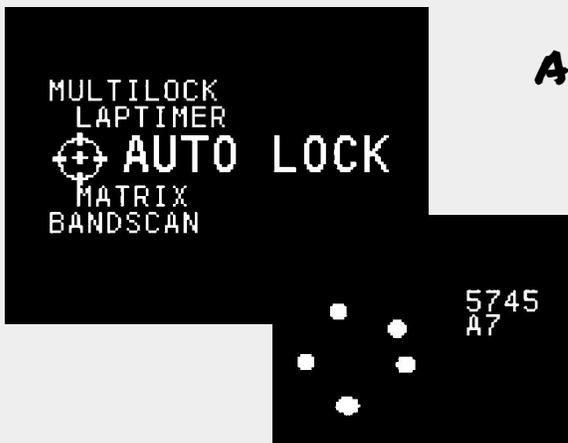
LAP TIMER AKA RACE TIMER



1. LAPS - SET THE NUMBER OF LAPS YOU WANT TO FLY
2. TIME - MINIMUM LAP TIME TO PREVENT DOUBLE LAPTIME COUNTS
3. RSSI - THRESHOLD FOR DETECTING A LAP - IT NEEDS TO BE SET SO IT RELIABLY DETECTS THE GATE
4. TUNE - SENSITIVITY OF TRIGGER FOR PASSING THROUGH GATE
5. START - STARTS THE LAP TIME (STOP = UP)



AUTO LOCK



LOCKS TO ACTIVE CHANNELS

SEARCHES FOR AN ACTIVE CHANNEL AND STOPS THERE UNTIL YOU PUSH UP OR DOWN, AND WILL CONTINUE TO SEARCH IN THAT SPECIFIC DIRECTION

SUPPORT

As with most of our products, we will constantly be improving it to give you the best possible performance. Your feedback is extremely important, so if you are having any issues, please submit a new support ticket by [CLICKING HERE](#) or join us in the [TBS LOUNGE](#) on Facebook

SUBMITTING A TICKET
WILL HELP US EFFICIENTLY ORGANIZE YOUR QUESTIONS
AND WILL ALLOW US TO GET BACK TO YOU IN A TIMELY
MANNER.
PLEASE BE AS DESCRIPTIVE AS POSSIBLE AND
INCLUDE PHOTOS OR DVR FOOTAGE IF IT HELPS US
TO UNDERSTAND YOUR PROBLEM BETTER

