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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
**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

<table>
<thead>
<tr>
<th><strong>5.8 GHz Bands</strong></th>
<th>Fat Shark, RaceBand, A, B, E, Favorites</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Antenna Connectors</strong></td>
<td>SMA</td>
</tr>
<tr>
<td><strong>Operating Voltage</strong></td>
<td>5.0V - 8.4V (2S)</td>
</tr>
</tbody>
</table>
| **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 |
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?**

- **DO YOU HAVE HDO's OR MODIFIED OLDER GOGGLES?**
  - **YES**
    - **ARE YOU PLANNING ON USING WIFI?**
      - **NO**
        - No external power or mod is needed
      - **YES**
        - **NO, I HAVE OLDER (un-modified) GOGGLES**
          - **EXTERNAL POWER**
          - Use the external power board - **INSTALLATION VIDEO**
          - Run a wire from the power pad of the FUSION to the barrel connector of your goggles (2S max)**

* 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

#WAYNEHOFANCLUB

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

UP

LEFT

ENTER

RIGHT

DOWN

MAIN SCREEN - MATRIX

LAPTIMER
AUTO LOCK
MATRX
BANDSCAN
SETTINGS

A3 5825
X2 X3 X4
A2 A3 A4
B2 B3 B4

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
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
NAVIGATING THE FUSION

MAIN MENU

SHORT CENTER PRESS TO ENTER THE MAIN MENU

BANDSCAN

SCANS THE BANDS AND DETECTS THE BEST CHANNELS

Press center or right to enter SETTINGS

SETTINGS OVERVIEW

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

SETTINOS OVERVIEW

- BANDSCAN
- SETTINOS
- QUAD FIND
- MULTILOCK
- LAPTATMER
- AUTO LOCK
NAVIGATING THE FUSION

**TURN SOUND (on/off)**
- Beeper for menu clicks

**OSD (on/off)**
- On screen display shows current frequency, channel and RSSI

**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 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.
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.