

TBS Crossfire telemetry

To activate the BlueTooth/Wi-Fi telemetry compatible with Mission Planner, press 2 s the transmitter button and go in RX Diversity\Output Map\Output 8 (or RX Micro V2\Output Map\Output 4) and change to "MAVLink TX" (Output 7 (or 3) will be automatically configured as "MAVLink RX"). Set General\BlueTooth to MAVLink.

For BlueTooth telemetry (only available on original TBS Crossfire TX) sometimes the device appears twice after some time, and the one that is temporarily named unknown might be the good one... Be careful to check that you are connected with the correct receiver (check its ID in the About menu of the transmitter)... After the device is associated and the corresponding COM port is correctly identified, no extra configuration is needed if the transmitter or receiver are switched off and back on.

For Wi-Fi telemetry (TBS Crossfire TX LITE), might need to upgrade Wi-Fi firmware from Wi-Fi (see tbs-cloud-activation.zip, <https://team-blacksheep.freshdesk.com/support/solutions/articles/4000161703-tbs-crossfire-update-the-wifi-module->, <https://www.team-blacksheep.com/tbs-crossfire-mavlink-over-wifi.pdf>). Only "MAVLink TX"/"MAVLink RX" outputs seem to be supported, "Serial TX"/"Serial RX" do not send anything (be careful, the baudrate might need to be 57600, to check if it was the problem...), so only MAVLink protocol transfer might be supported through Wi-Fi...

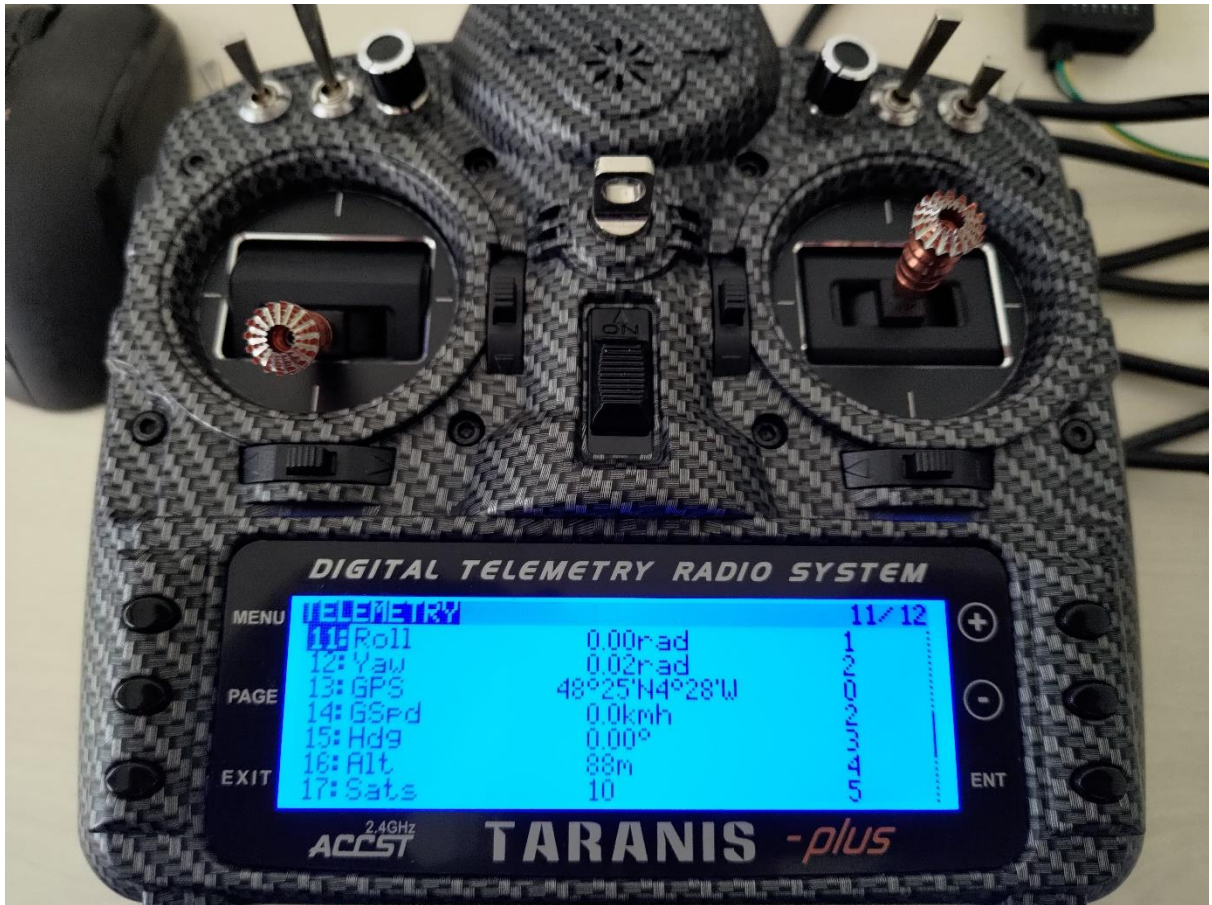
"MAVLink Emu" TBS transmitter state does not seem to contain the radio channels info, but "MAVLink Full" state (available when "MAVLink TX" and "MAVLink RX" are configured on CH7 and 8 of the TBS receiver and if they receive valid data, e.g. Pixhawk TELEM1 baudrate should be set to 115200 with TBS firmware ≥ 6 , otherwise 57600; <https://www.ensta-bretagne.fr/lebars/Share/ArduPilot%20simulator.zip> with FTDI TTL-232R-3V3 cable and Eterlogic VSPE can be also used) has them in RC_CHANNELS MAVLink message. Also, RC_CHANNELS_OVERRIDE MAVlink message is sent from "MAVLink TX", so the autopilot connected on it can be controlled manually by the radio without PPM or SBUS connection.

The autopilot needs to send at least GPS_RAW_INT (including a valid number of satellites) MAVLink messages to "MAVLink RX" (and probably also HEARTBEAT and potentially others) for the OLED screen of the TBS transmitter to correctly update the GPS position.

Note that the TBS transmitter does not create a COM port through USB and therefore does not seem to give access to telemetry through USB...







Vehicle 1	
Comp 1 MAV_COMP_ID_AUTOPILOT1	
AHRS (0.7 Hz, #163) 27Bps	
AHRS2 (1.3 Hz, #178) 48Bps	
ATTITUDE (1.3 Hz, #30) 53Bps	
AUTOPILOT_VERSION (0.0 Hz, #148) 0Bps	
COMMAND_ACK (0.0 Hz, #77) 0Bps	
EKF_STATUS_REPORT (0.7 Hz, #193) 23Bps	
FILE_TRANSFER_PROTOCOL (0.0 Hz, #110) 0Bps	
GLOBAL_POSITION_INT (1.0 Hz, #33) 40Bps	
GPS_RAW_INT (0.7 Hz, #24) 37Bps	
HEARTBEAT (0.7 Hz, #0) 14Bps	
HWSTATUS (0.7 Hz, #165) 9Bps	
LOCAL_POSITION_NED (0.7 Hz, #32) 27Bps	
MEMINFO (1.0 Hz, #152) 19Bps	
MISSION_CURRENT (1.0 Hz, #42) 13Bps	
PARAM_VALUE (0.0 Hz, #22) 0Bps	
POWER_STATUS (1.0 Hz, #125) 14Bps	
RAW_IMU (1.0 Hz, #27) 41Bps	
RC_CHANNELS (1.0 Hz, #65) 53Bps	
chan1_raw	1496 System.UInt16
chan10_raw	1000 System.UInt16
chan11_raw	1000 System.UInt16
chan12_raw	1000 System.UInt16
chan13_raw	0 System.UInt16
chan14_raw	0 System.UInt16
chan15_raw	0 System.UInt16
chan16_raw	0 System.UInt16
chan17_raw	0 System.UInt16
chan18_raw	0 System.UInt16
chan2_raw	1500 System.UInt16
chan3_raw	1256 System.UInt16
chan4_raw	1501 System.UInt16
chan5_raw	1500 System.UInt16
chan6_raw	1500 System.UInt16
chan7_raw	1500 System.UInt16
chan8_raw	1500 System.UInt16
chan9_raw	1000 System.UInt16
chancount	16 System.Byte
rssi	0 System.Byte
time_boot_ms	1008939 System.UInt32
RC_CHANNELS_SCALED (0.7 Hz, #34) 10Bps	
SCALED_IMU2 (1.0 Hz, #116) 36Bps	
SCALED_IMU3 (1.0 Hz, #129) 34Bps	
SCALED_PRESSURE (1.0 Hz, #29) 26Bps	
SCALED_PRESSURE2 (1.0 Hz, #137) 26Bps	
SENSOR_OFFSETS (0.0 Hz, #150) 0Bps	
SERVO_OUTPUT_RAW (1.0 Hz, #36) 22Bps	
SIMSTATE (1.3 Hz, #164) 75Bps	
STATUSTEXT (0.0 Hz, #253) 0Bps	
SYS_STATUS (1.0 Hz, #1) 43Bps	
SYSTEM_TIME (0.7 Hz, #2) 15Bps	
TIMESYNC (0.0 Hz, #111) 0Bps	
VFR_HUD (1.3 Hz, #74) 40Bps	
VIBRATION (0.7 Hz, #241) 21Bps	
Vehicle 51	
Comp 68 MAV_COMP_ID_TELEMETRY_RADIO	
RADIO_STATUS (10.0 Hz, #109) 190Bps	
fixed	0 System.UInt16
noise	0 System.Byte
remnoise	0 System.Byte
remrssi	203 System.Byte
rssi	208 System.Byte

[-] Vehicle 100			
[-] Comp 1 MAV_COMP_ID_AUTOPILOT1			
[-] ATTITUDE (7.7 Hz, #30) 215Bps			
pitch	0	System.Single	
pitchspeed	0	System.Single	
roll	0	System.Single	
rollspeed	0	System.Single	
time_boot_ms	0	System.UInt32	
yaw	-2.06243	System.Single	
yawspeed	0	System.Single	
[-] COMMAND_ACK (0.0 Hz, #77) 0Bps			
[-] GPS_RAW_INT (14.3 Hz, #24) 602Bps			
alt	88000	System.Int32	
alt_ellipsoid	0	System.Int32	
cog	6171	System.UInt16	
eph	65535	System.UInt16	
epv	65535	System.UInt16	
fix_type	6	System.Byte	
h_acc	0	System.UInt32	
hdg_acc	0	System.UInt32	
lat	484197676	System.Int32	
lon	-44740683	System.Int32	
satellites_visible	8	System.Byte	
time_usec	0	System.UInt64	
v_acc	0	System.UInt32	
vel	249	System.UInt16	
vel_acc	0	System.UInt32	
yaw	0	System.UInt16	
[-] HEARTBEAT (15.7 Hz, #0) 329Bps			
autopilot	8	System.Byte	
base_mode	65	System.Byte	
custom_mode	0	System.UInt32	
mavlink_version	3	System.Byte	
system_status	4	System.Byte	
type	10	System.Byte	
[-] VFR_HUD (1.7 Hz, #74) 52Bps			
airspeed	0	System.Single	
alt	0	System.Single	
climb	0	System.Single	
groundspeed	2.499961	System.Single	
heading	241	System.Int16	
throttle	100	System.UInt16	
[-] Vehicle 51			
[-] Comp 68 MAV_COMP_ID_TELEMETRY_RADIO			
[-] RADIO_STATUS (9.7 Hz, #109) 184Bps			
fixed	0	System.UInt16	
noise	0	System.Byte	
remnoise	0	System.Byte	
remrssi	180	System.Byte	
rssi	174	System.Byte	
rxerrors	0	System.UInt16	
txbuf	100	System.Byte	