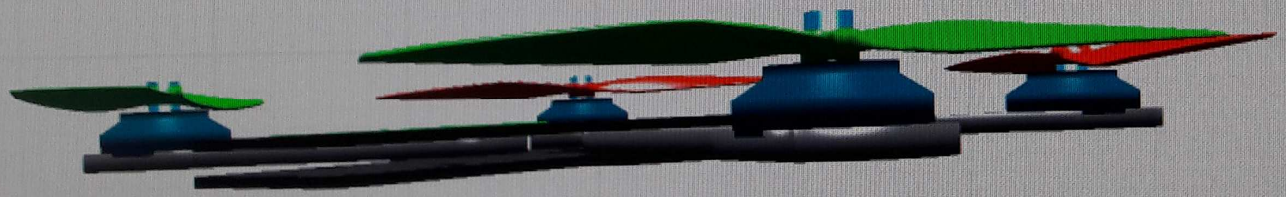
Setup

DOCUMENTATION FOR 1.11.0

Calibrate Accelerometer	Place board or frame on **leveled** surface, proceed with calibration, ensure platform is not moving during calibration period
Calibrate Magnetometer	Move multirotor at least **360** degrees on all axis of rotation, you have 30 seconds to perform this task
Reset Settings	Restore settings to **default**
Backup / Restore	**Backup** your configuration in case of an accident, **CLI** settings are not included - See 'dump' cli command

Heading: 221 deg
Pitch: 1.8 deg
Roll: 0.5 deg

Reset Z axis, offset: 0 deg



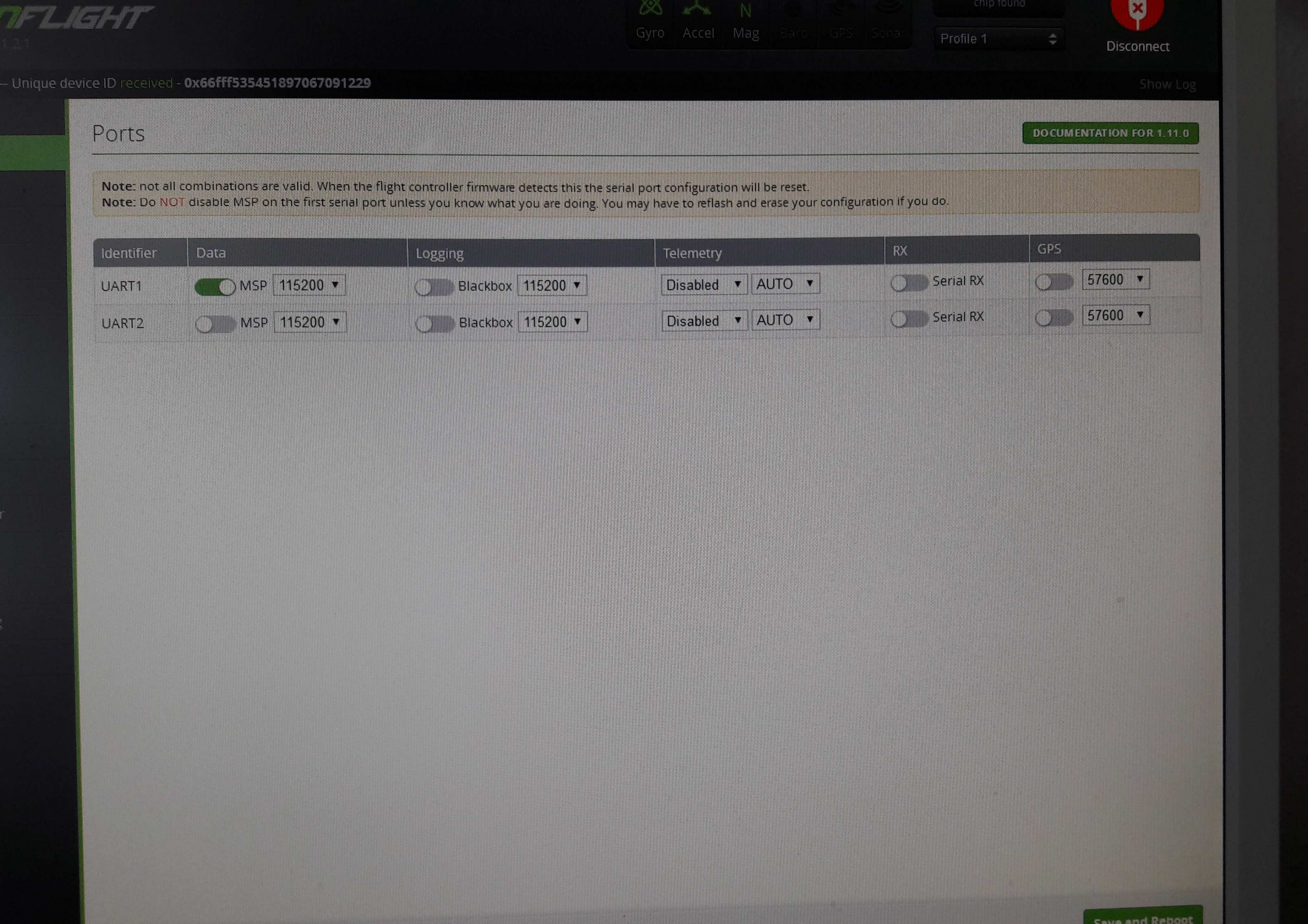
Info

Battery voltage:	0 V
Capacity drawn:	0 mAh
Current draw:	0.00 A
RSSI:	0 %

GPS

3D Fix:	
Sats:	
Latitude:	
Longitude:	

Instruments

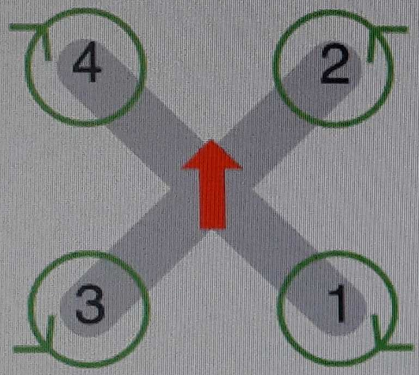

FLIGHT
Gyro
Accel
Mag
Profile 1
Disconnect
– Unique device ID received - 0x66fff535451897067091229
Show Log
Ports
DOCUMENTATION FOR 1.11.0
Note: not all combinations are valid. When the flight controller firmware detects this the serial port configuration will be reset.
Note: Do NOT disable MSP on the first serial port unless you know what you are doing. You may have to reflash and erase your configuration if you do.
Identifier
Data
Logging
Telemetry
RX
GPS
UART1
MSP
115200
Blackbox
115200
Disabled
AUTO
Serial RX
57600
UART2
MSP
115200
Blackbox
115200
Disabled
AUTO
Serial RX
57600

Configuration

DOCUMENTATION FOR 1.11.0

Note: Not all combinations of features are valid. When the flight controller firmware detects invalid feature combinations conflicting features will be disabled.
Note: Configure serial ports before enabling the features that will use the ports.

Mixer



Quad X

ESC/Motor Features

- MOTOR_STOP — Don't spin the motors when armed
- ONESHOT125 — ONESHOT ESC support
- Disarm motors regardless of throttle value (When arming via AUX channel)
- 5 — Disarm motors after set delay(Seconds) (Requires MOTOR_STOP feature)
- 1100 — Minimum Throttle
- 1500 — Middle Throttle [RC inputs center value]
- 2000 — Maximum Throttle
- 1000 — Minimum Command

Board and Sensor Alignment

- 0 — Roll Degrees
- 0 — Pitch Degrees
- 0 — Yaw Degrees

Accelerometer Trim

- 0 — Accelerometer Roll Trim
- 0 — Accelerometer Pitch Trim

Receiver Mode

RX_PPM	PPM RX input
RX_SERIAL	Serial-based receiver (SPEKSAT, SBUS, SUMD)
RX_PARALLEL_PWM	PWM RX input (one wire per channel)
RX_MSP	MSP RX input (control via MSP port)

Battery Voltage

- VBAT — Battery voltage monitoring
- 3,3 — Minimum Cell Voltage
- 4,3 — Maximum Cell Voltage
- 3.5 — Warning Cell Voltage

Save and Reboot

ID received - 0x66fff535451897067091229 Show Log

Serial Receiver Provider

Note: Remember to configure a Serial Port (via Ports tab) and choose a Serial Receiver Provider when using RX_SERIAL feature.

SPEKTRUM1024
SPEKTRUM2048
SBUS
SUMD
SUMH
XBUS_MODE_B
XBUS_MODE_B_RJ01

110 Voltage Scale

0.0 Battery Voltage

Current Sensor

CURRENT_METER Battery current monitoring

400 Scale the output voltage to milliamps [1/10th mV/A]

0 Offset in millivolt steps

0.00 Battery Current

Enable support for legacy Multiwii MSP current output

RSSI (Signal Strength)

RSSI_ADC Analog RSSI input

System configuration

Note: Changing this may require PID re-tuning.

2000 Flight Controller Loop Time

500 Cycles/Sec (Hz)

GPS

Note: Remember to configure a Serial Port (via Ports tab) when using GPS feature.

GPS GPS for navigation and telemetry

NMEA Protocol

Auto-detect Ground Assistance Type

0 Magnetometer Declination [deg]

Other Features

INFLIGHT_ACC_CAL	In-flight level calibration
SERVO_TILT	Servo gimbal
SOFTSERIAL	Enable CPU based serial ports
SONAR	Sonar
TELEMETRY	Telemetry output
3D	3D mode (for use with reversible ESCs)
LED_STRIP	Multi-color RGB LED strip support
DISPLAY	OLED Screen Display

RSSI (Signal Strength)

RSSI_ADC Analog RSSI input

System configuration

Note: Changing this may require PID re-tuning.

2000 Flight Controller Loop Time

500 Cycles/Sec (Hz)

GPS

Note: Remember to configure a Serial Port (via Ports tab) when using GPS feature.

GPS GPS for navigation and telemetry

NMEA Protocol

Auto-detect Ground Assistance Type

0 Magnetometer Declination [deg]

Other Features

INFLIGHT_ACC_CAL	In-flight level calibration
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SOFTSERIAL	Enable CPU based serial ports
SONAR	Sonar
TELEMETRY	Telemetry output
3D	3D mode (for use with reversible ESCs)
LED_STRIP	Multi-color RGB LED strip support
DISPLAY	OLED Screen Display
BLACKBOX	Blackbox flight data recorder
CHANNEL_FORWARDING	Forward aux channels to servo outputs

3D

1406 3D Deadband Low

1514 3D Deadband High

1460 3D Neutral

50 3D Deadband Throttle

Save and Reboot

Gyro Accel Mag Baro GPS Sonar

Profile 1

Disconnect

Unique device ID received - **0x66fff535451897067091229**

Show Log

Failsafe

DOCUMENTATION FOR 1.11.0

Failsafe configuration has changed considerably. Use Cleanflight **v1.12.0+** to enable the improved configuration panel.

Receiver failsafe

Failsafe settings on RX signal loss

1000 Failsafe Throttle

PID Tuning

DOCUMENTATION FOR 1.11.0

PID Controller

MultiWii (Rewrite)

Reset PID Controller | Show all PIDs

Name	Proportional	Integral	Derivative
Basic/Acro			
ROLL	6,2	0,035	47
PITCH	7,2	0,040	42
YAW	10,0	0,045	3
Magnometer/Heading			
MAG	4,0		

Angle/Horizon	Strength (Angle)	Strength (Horizon)	Transition (Horizon)
LEVEL	2,0	0,010	100

ROLL rate	PITCH rate	YAW rate
0,75	0,75	1,00

TPA	TPA Breakpoint
0,00	1500

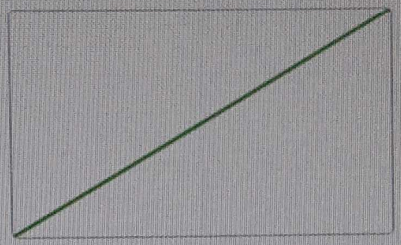
Receiver

DOCUMENTATION FOR 1.11.0

Please read receiver chapter of the documentation. Configure serial port (if required), receiver mode (serial/ppm/pwm), provider (for serial receivers), bind receiver, set channel map, configure channel endpoints/range on TX so that all channels go from ~1000 to ~2000. Set midpoint (default 1500), trim channels to 1500, configure stick deadband, verify behaviour when TX is off or out of range.
IMPORTANT: Before flying read failsafe chapter of documentation and configure failsafe.

Channel Map	RSSI Channel
TAER1234	Disabled

Roll	1500
Pitch	1500
Yaw	1500
Throttle	885
AUX 1	1500
AUX 2	1500
AUX 3	1500
AUX 4	1500

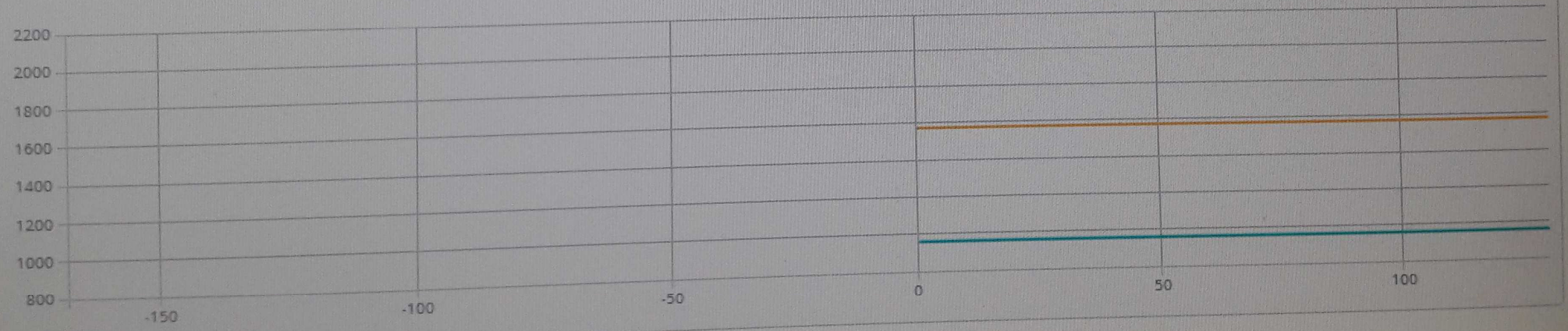


Throttle MID	Throttle EXPO
0,50	0,00

RC Rate	RC Expo
1,10	0,70

RC Yaw Expo
0,00

50 ms



Refresh Save

1.2.1

Show Log

Modes

DOCUMENTATION FOR 1.11.0

Use ranges to define the switches on your transmitter and corresponding mode assignments. A receiver channel that gives a reading between a range min/max will activate the mode. Remember to save your settings using the Save button.

ARM

Add Range

ANGLE

Add Range

AUX 2 ▾

Min: 1700
Max: 2100

HORIZON

Add Range

AUX 2 ▾

Min: 1300
Max: 1700

MAG

Add Range

HEADFREE

Add Range

HEADADJ

Add Range

BEEPER

Add Range

OSD SW

Save

1.2.1

ustments

DOCUMENTATION FOR 1.11.0

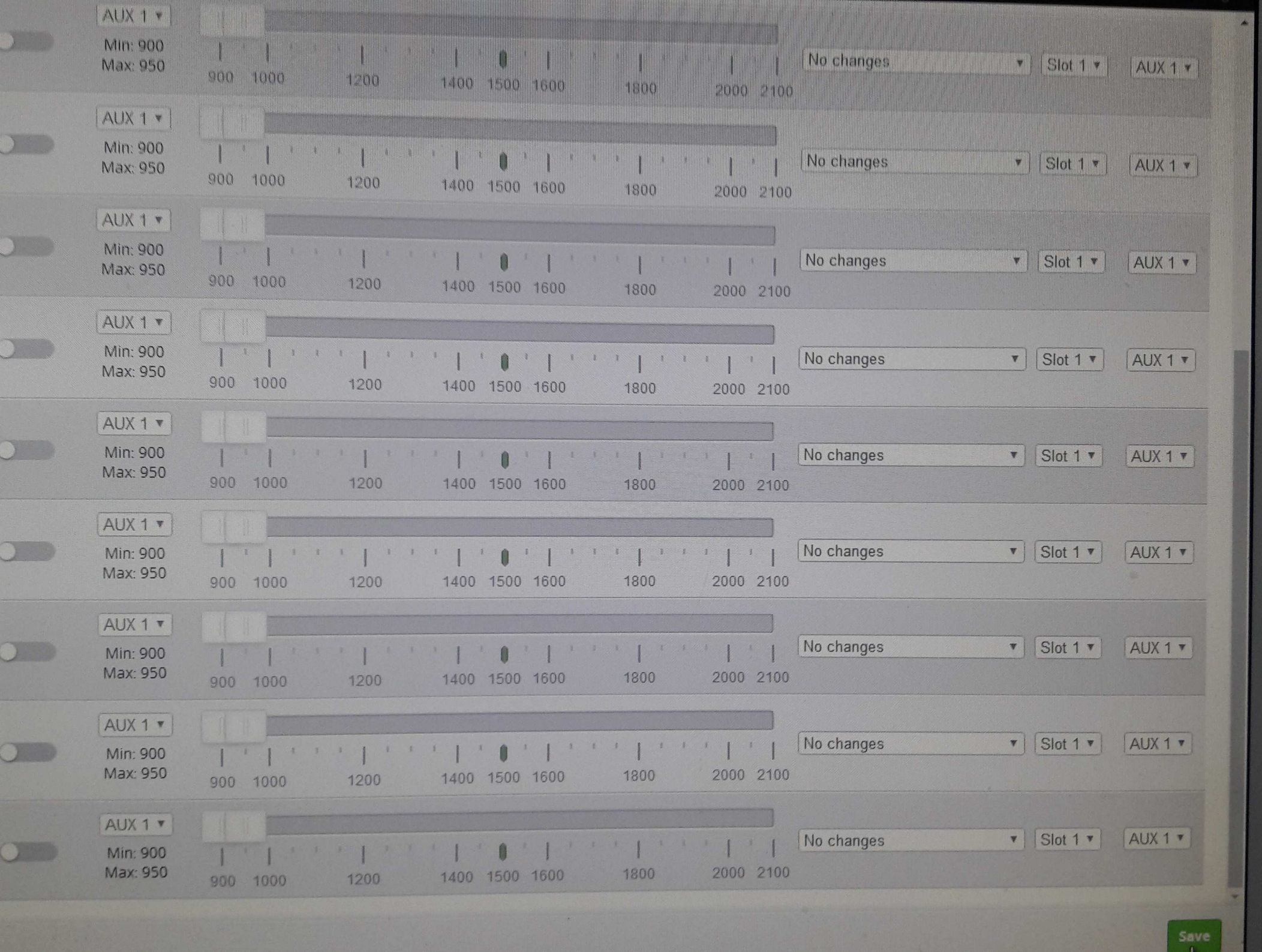
figure adjustment switches. See the 'in-flight adjustments' section of the manual for details. The changes that adjustment functions make are not saved automatically. There are 4 slots. Each
ch used to concurrently make adjustments requires exclusive use of a slot.
mples
Slot 1 and a 3POS switch on AUX1 to select between Pitch/Roll P, I and D and another 3POS switch on AUX2 to increase or decrease the value when held up or down.
Slot 2 and a 3POS switch on AUX4 to select enable Rate Profile Selection via the same 3POS switch on the same channel.

nabled	when channel	is in range	then apply	using slot	via channel
	AUX 1	Min: 900 Max: 950	No changes	Slot 1	AUX 1
	AUX 1	Min: 900 Max: 950	No changes	Slot 1	AUX 1
	AUX 1	Min: 900 Max: 950	No changes	Slot 1	AUX 1
	AUX 1	Min: 900 Max: 950	No changes	Slot 1	AUX 1
	AUX 1	Min: 900 Max: 950	No changes	Slot 1	AUX 1
	AUX 1	Min: 900 Max: 950	No changes	Slot 1	AUX 1
	AUX 1	Min: 900 Max: 950	No changes	Slot 1	AUX 1

900 1000 1200 1400 1500 1600 1800 2000 2100

Save

1.2.1


AUX 1
Min: 900
Max: 950
900 1000 1200 1400 1500 1600 1800 2000 2100
No changes
Slot 1
AUX 1
Save

Servos

DOCUMENTATION FOR 1.11.0

Change Direction in TX To Match														
Name	MID	MIN	MAX	Angle at min	Angle at max	CH1	CH2	CH3	CH4	A1	A2	A3	A4	Direction and rate
Servo 0	1500	1000	2000	-90	90	☐	☐	☐	☐	☐	☐	☐	☐	Rate: 100%
Servo 1	1500	1000	2000	-90	90	☐	☐	☐	☐	☐	☐	☐	☐	Rate: 100%
Servo 2	1500	1000	2000	-90	90	☐	☐	☐	☐	☐	☐	☐	☐	Rate: 100%
Servo 3	1500	1000	2000	-90	90	☐	☐	☐	☐	☐	☐	☐	☐	Rate: 100%
Servo 4	1500	1000	2000	-90	90	☐	☐	☐	☐	☐	☐	☐	☐	Rate: 100%
Servo 5	1500	1000	2000	-90	90	☐	☐	☐	☐	☐	☐	☐	☐	Rate: 100%
Servo 6	1500	1000	2000	-90	90	☐	☐	☐	☐	☐	☐	☐	☐	Rate: 100%
Servo 7	1500	1000	2000	-90	90	☐	☐	☐	☐	☐	☐	☐	☐	Rate: 100%

Enable Live mode

Save

Gyro Accel Mag Baro GPS Sonar

Profile 1

Disconnect

Unique device ID received - **0x66fff535451897067091229**

Show Log

GPS

DOCUMENTATION FOR 1.11.0

GPS

3D Fix:	False
Altitude:	0 m
Latitude:	0.0000 deg
Longitude:	0.0000 deg
Speed:	0 cm/s
Sats:	0
Dist to Home:	0 m

GPS Signal Strength

Sat ID	Qty	Signal Strength
0	0	
0	0	
0	0	
0	0	
0	0	
0	0	
0	0	
0	0	
0	0	
0	0	
0	0	
0	0	
0	0	
0	0	
0	0	
0	0	
0	0	

Current GPS location

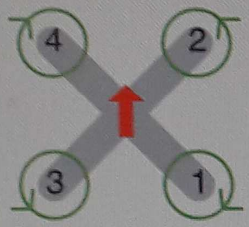
Waiting for GPS 3D fix...

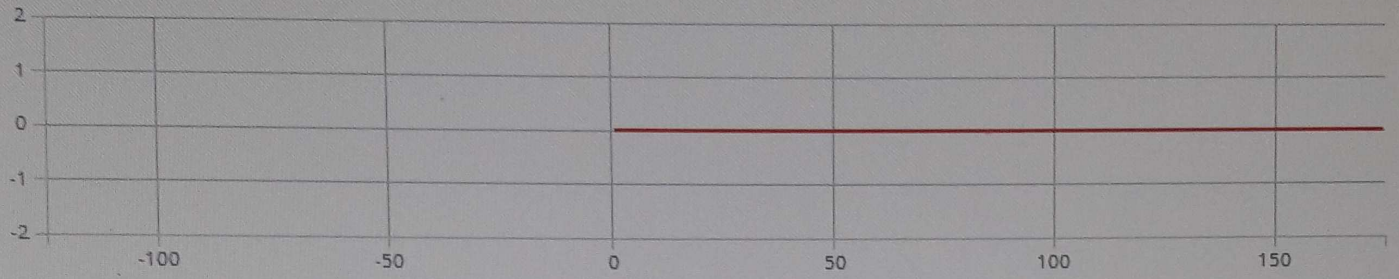
device ID received - **0x66fff535451897067091229**

Show Log

Motors

DOCUMENTATION FOR 1.11.0





Accelerometer - [Reset]

Refresh: 20 ms

Scale: 2

X: 0.00 (0.00)

Y: 0.00 (-0.00)

Z: 0.00 (-0.01)

RMS: 0.0013

Motors

1	2	3	4	5	6	7	8
1000	1000	1000	1000	0	0	0	0

1	2	3	4	5	6	7	8	Master
1000	1000	1000	1000	1000	1000	1000	1000	

Servos

1	2	3	4	5	6	7	8
1500	1500	1500	1500	1500	1500	1500	1500

Motor Test Mode Notice:
Moving the sliders will cause the motors to **spin up**.
In order to prevent injury **remove ALL propellers** before using this feature.

I understand the risks, propellers are removed - Enable motor control.

ce ID received - **0x66fff535451897067091229**

Disconnect

Show Log

Race Transponder

DOCUMENTATION FOR 1.11.0

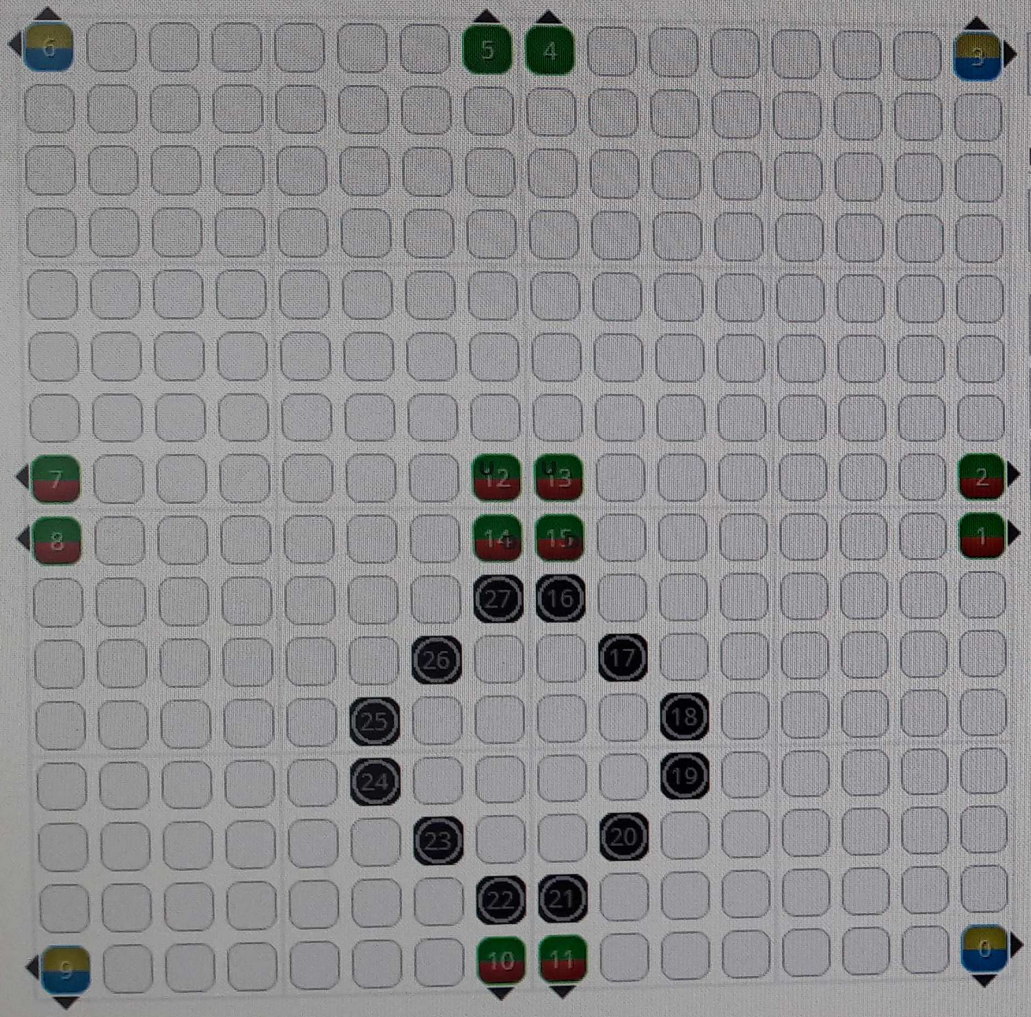
Your flight controller's firmware does not support transponder functionality.

Transponders systems allow race organizers to time your laps. The transponder is fitted to your aircraft and when your aircraft passes the timing gate the track-side receiver registers your code and records your laptime. When fitting an IR based transponder your should ensure that it points outward from your aircraft towards the track-side receivers and that the light beam is not obstructed by your airframe, battery-straps, cables, propellers, etc.

LED Strip

DOCUMENTATION FOR 1.11.0

The flight controller can control colors and effects of individual LEDs on a strip.
Configure LEDs on the grid, configure wiring order then attach LEDs on your aircraft according to grid positions.



Clear selected | Clear ALL

4
Remaining

LED Functions

Warnings | Modes & Orientation

Indicator | Arm State

Throttle | Ring

Color

LED Orientation and Color

N W E S U D

0	1	2	3
4	5	6	7
8	9	10	11
12	13	14	15

LED Strip Wiring

Wire Ordering Mode

Clear selected | Clear ALL Wiring

LEDs without wire ordering number will not be saved.

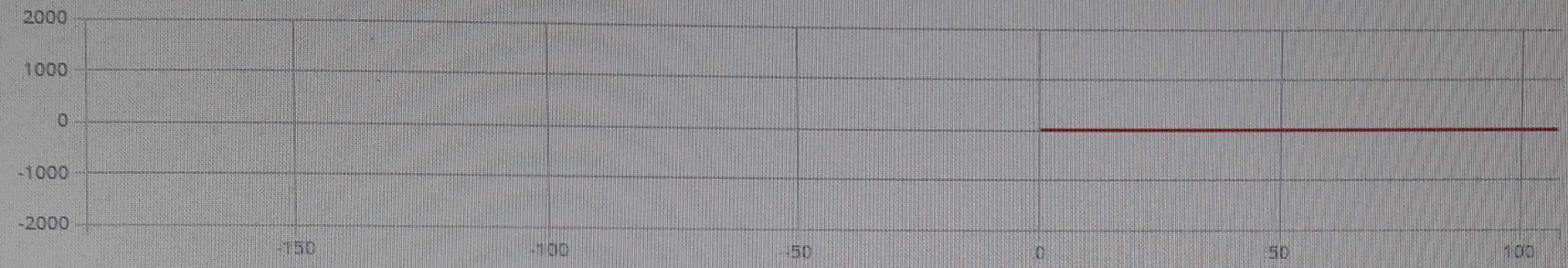
Save

Sensors

DOCUMENTATION FOR 1.11.0

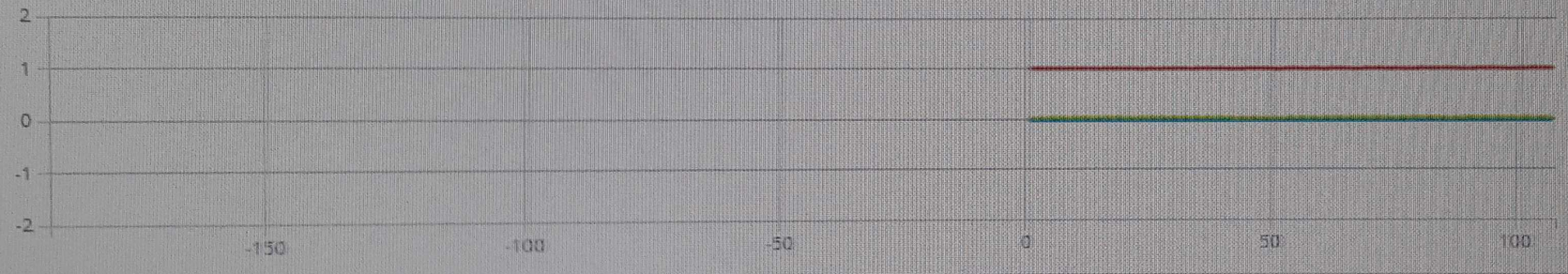
Keep in mind that using fast update periods and rendering multiple graphs at the same time is resource heavy and will burn your battery quicker if you use a laptop.
We recommend to only render graphs for sensors you are interested in while using reasonable update periods.

☑ Gyroscope ☑ Accelerometer ☑ Magnetometer ☐ Barometer ☐ Sonar ☐ Debug



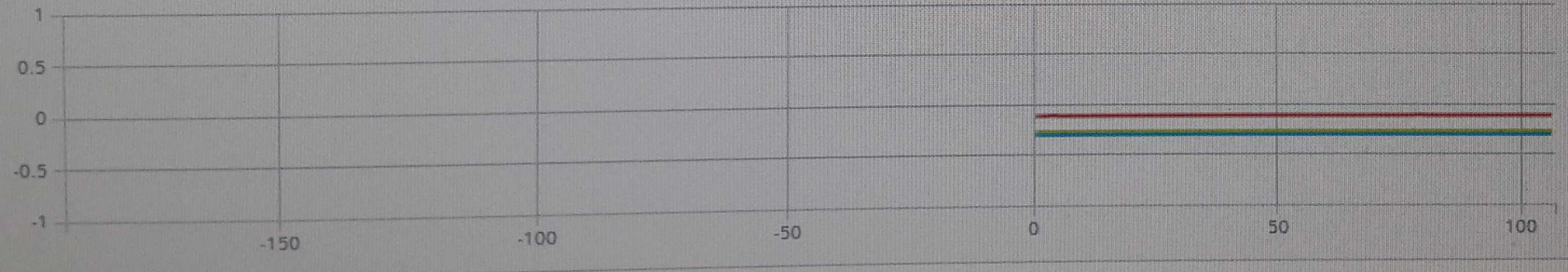
Gyroscope - deg/s

Refresh: 50 ms
Scale: 2000
X: -1.22
Y: -0.98
Z: 0.24



Accelerometer - g

Refresh: 50 ms
Scale: 2
X: -0.04
Y: 0.01
Z: 1.00



Magnetometer - Ga

Refresh: 50 ms
Scale: 1
X: -0.30
Y: -0.27
Z: -0.12

Tethered Logging

DOCUMENTATION FOR 1.11.0

Data will be logged in this tab only, leaving the tab will cancel logging and application will return to its normal "**configurator**" state.
You are free to select the global update period, data will be written into the log file every **1** second for performance reasons.

- [ ] **MSP_RAW_IMU** 9 columns (accel[x, y, z], gyro[x, y, z], mag[x, y, z])
- [ ] **MSP_ATTITUDE** 3 columns (x, y, z)
- [ ] **MSP_ALTITUDE** one column
- [ ] **MSP_RAW_GPS** 7 columns
- [ ] **MSP_ANALOG** 4 columns
- [ ] **MSP_RC** 8 columns by default
- [ ] **MSP_MOTOR** 8 columns by default
- [ ] **MSP_DEBUG** 4 columns

100 ms

Samples Saved: 0
Log Size: 0 Bytes

Select Log File

Start Logging

kbox

DOCUMENTATION FOR 1.11.0

board serial logging device

can log to an external logging device (such as an OpenLog or compatible clone) by using a serial port. Configure the port on the Ports tab.

oard dataflash chip

t logs can be recorded to your flight controller's onboard dataflash chip.

ase flash | Save flash to file...

flight controller does not have a compatible dataflash chip available.