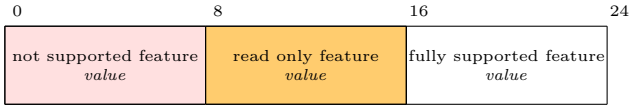
Supported MSP Commands

May 27, 2021

The firmware supports parts of the betaflight MSP API Version 1.42 we marked all data corresponded to unsupported features with red, features which are only static and not configure able with yellow. Fully supported feature are not highlighted.
Here an example:



Contents

1 Request Commands

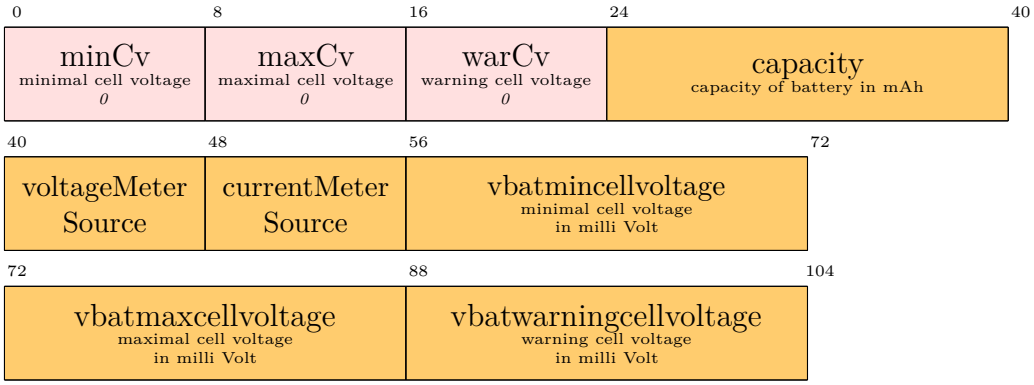
Commands requesting data from the flight controller.

1.1 MSP_API_VERSION

- description: MSP API version of flight controller
- code: 1
- command data: none
- reply data:

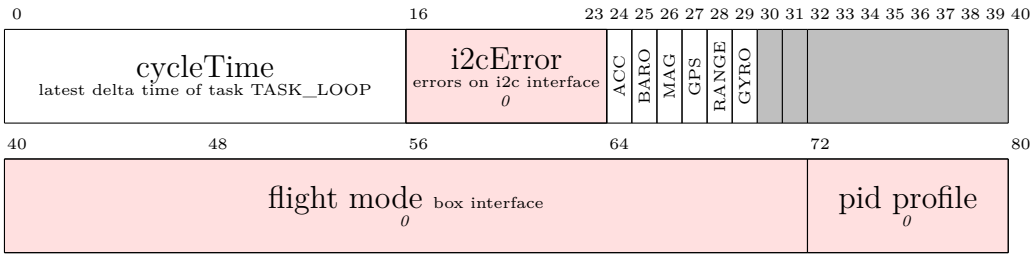
1.2 MSP_BATTERY_CONFIG

- description: Get information about the battery configuration used.
- code: 32
- command data: none
- reply data:



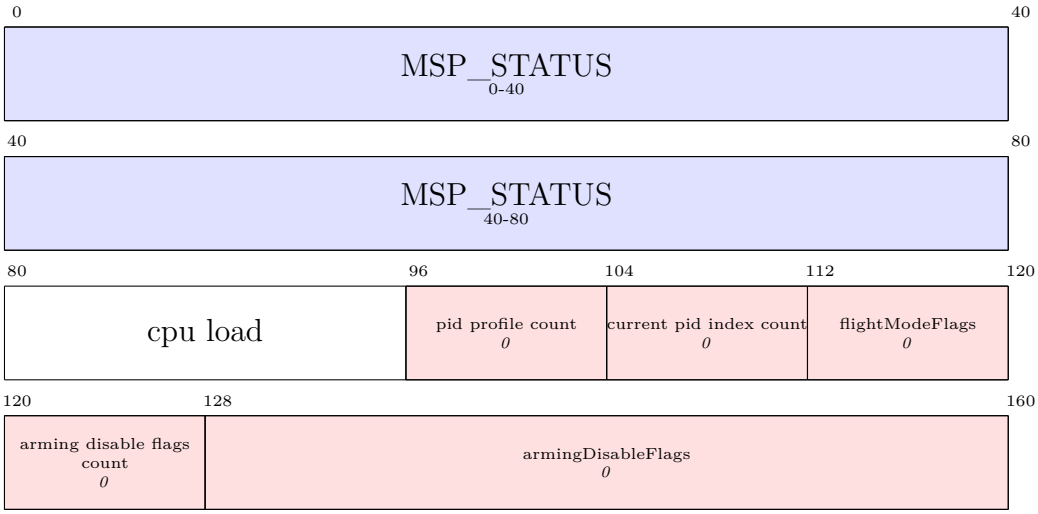
1.3 MSP_STATUS

- description: Get status information of the flight controller
- code: 101
- command data: none
- reply data:



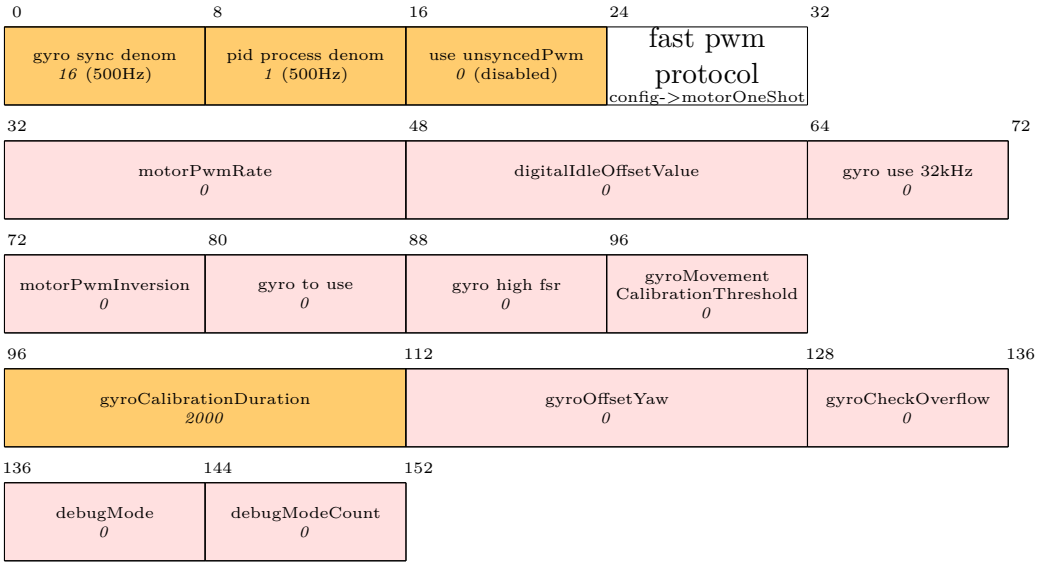
1.4 MSP_STATUS_EX

- description: Get extended status information of the flight controller
- code: 150
- command data: none
- reply data:



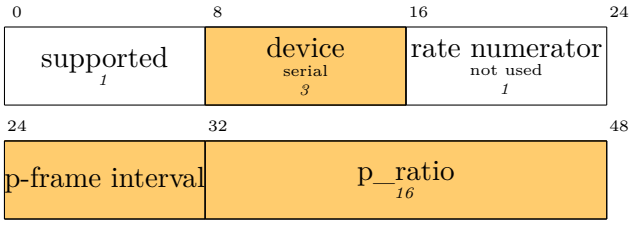
1.5 MSP_ADVANCED_CONFIG

- description: get advanced information about the configuration of the flight controller
- code: 90
- command data: none
- reply data:



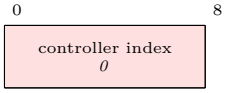
1.6 MSP_BLACKBOX_CONFIG

- description: information about the blackbox (only if enabled in the build)
- code: 80
- command data: none
- reply data:



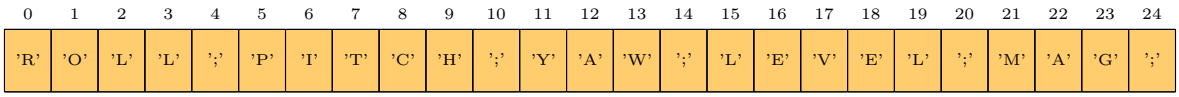
1.7 MSP_PID_CONTROLLER

- description: information about the used pid controller
- code: 59
- command data: none
- reply data:



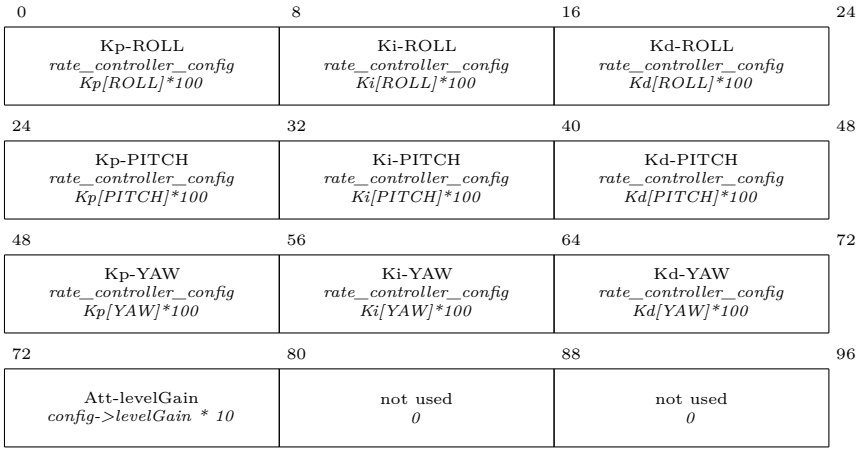
1.8 MSP_PIDNAMES

- description: names of the supported pid controllers as ';' separated list
- code: 117
- command data: none
- reply data:



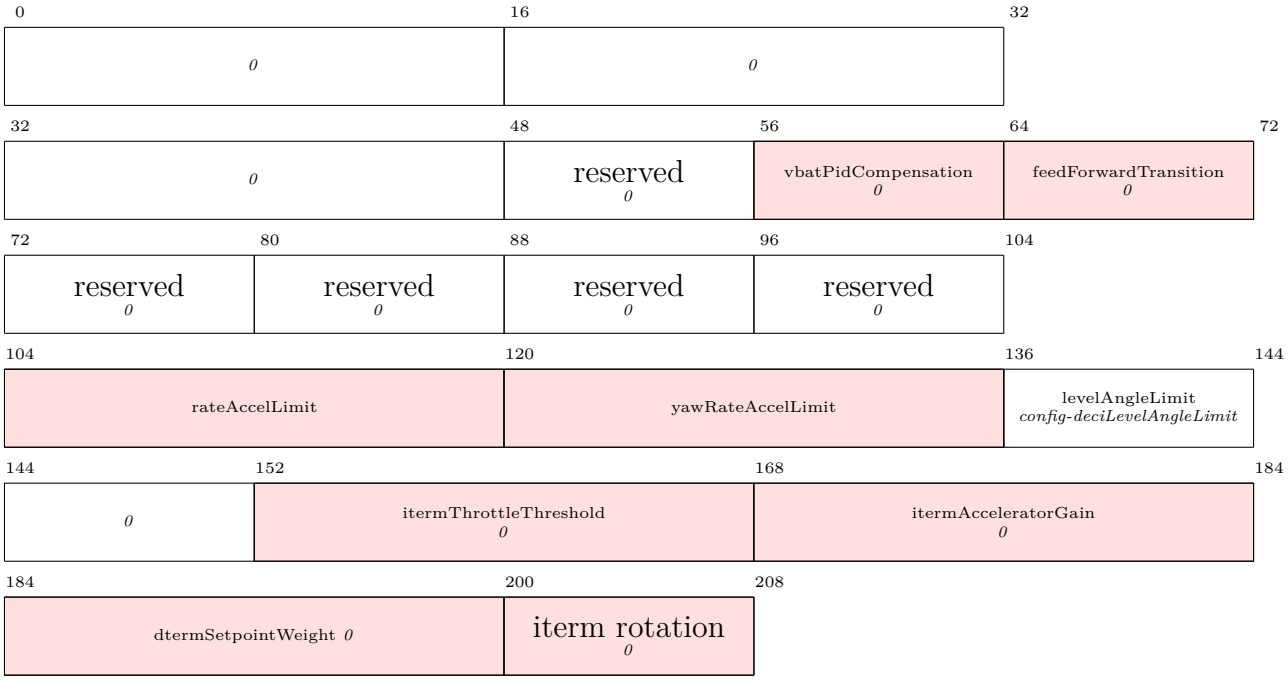
1.9 MSP_PID

- description: information about pid settings
- code: 112
- command data: none
- reply data:



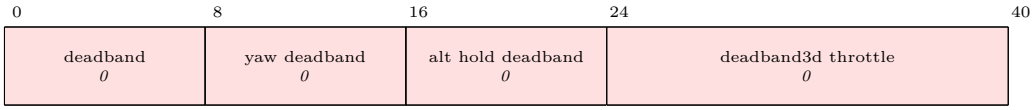
1.10 MSP_PID_ADVANCED

- description: get advanced pid information
- code: 94
- command data: none
- reply data:



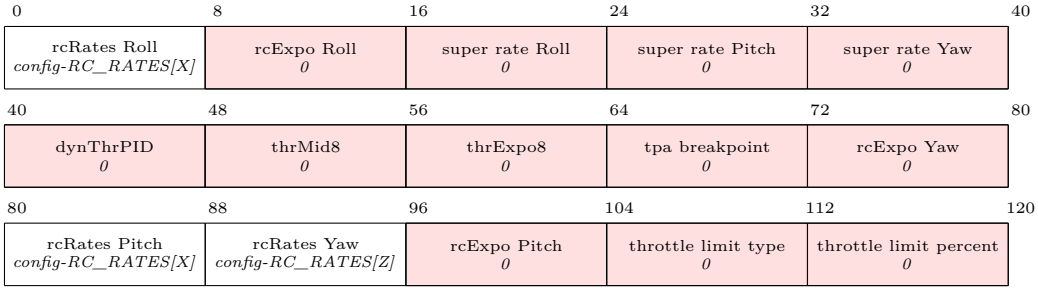
1.11 MSP_RC_DEADBAND

- description: deadband of controller
- code: 125
- command data: none
- reply data:



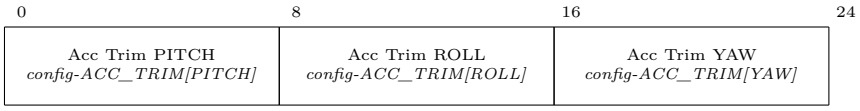
1.12 MSP_RC_TUNING

- description: rc tuning
- code: 111
- command data: none
- reply data:



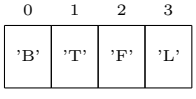
1.13 MSP_ACC_TRIM

- description: trims for accelerometer
- code: 240
- command data: none
- reply data:



1.14 MSP_FC_VARIANT

- description: flight controller variant
- code: 2
- command data: none
- reply data:

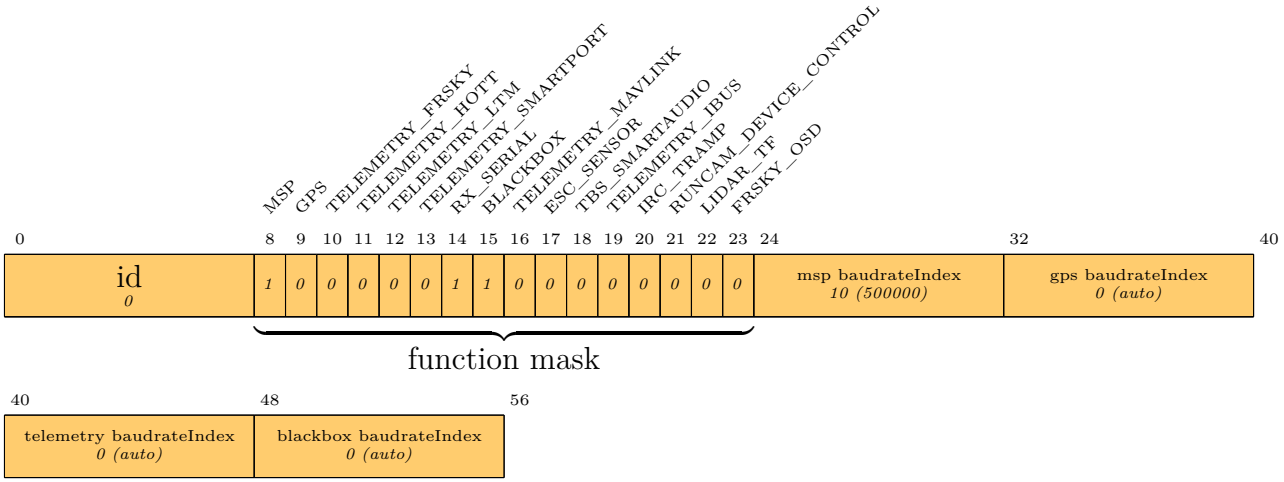


1.15 MSP_FC_VERSION

- description: version of flight controller
- code: 3
- command data: none
- reply data:

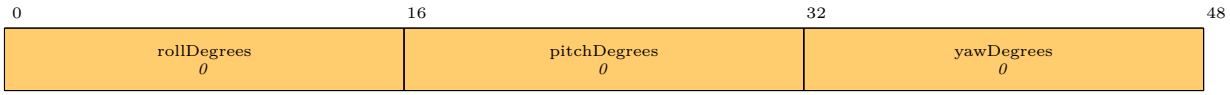
1.16 MSP_CF_SERIAL_CONFIG

- description: configuration of serial interfaces
- code: 54
- command data: none
- reply data:



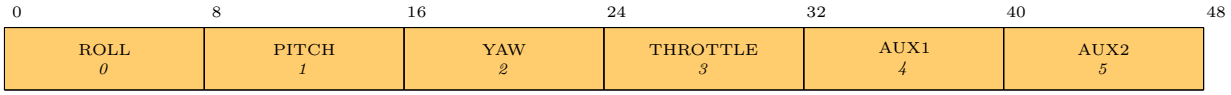
1.17 MSP_BOARD_ALIGNMENT_CONFIG

- description: alignment of sensors
- code: 38
- command data: none
- reply data:



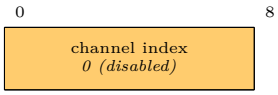
1.18 MSP_RX_MAP

- description: return mapping of channels default mapping = [ROLL, PITCH, YAW, THROTTLE, AUX1,...]
- code: 64
- command data: none
- reply data:



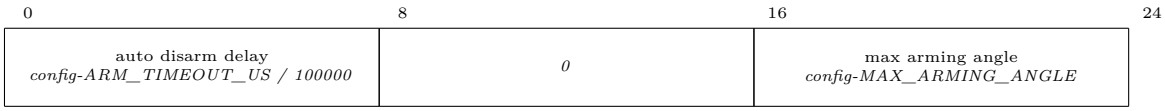
1.19 MSP_RSSI_CONFIG

- description: channel index of rssi
- code: 50
- command data: none
- reply data:



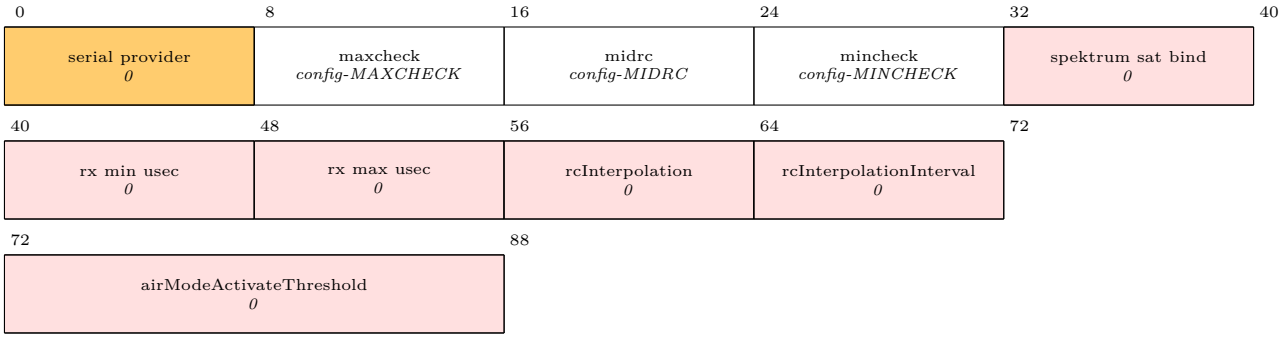
1.20 MSP_ARMING_CONFIG

- description: information about arming
- code: 61
- command data: none
- reply data:



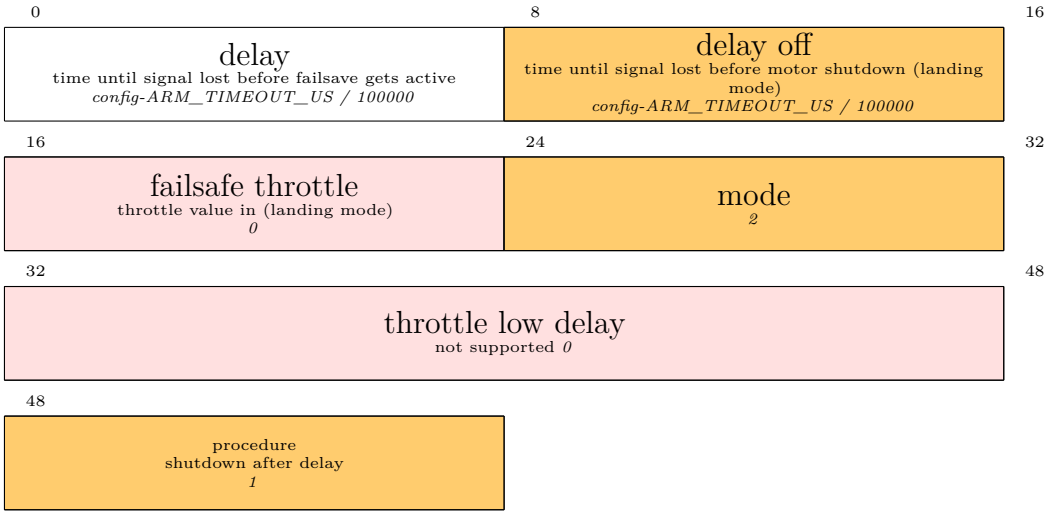
1.21 MSP_RX_CONFIG

- description: information about rx configuration
- code: 44
- command data: none
- reply data:



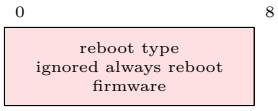
1.22 MSP_FAILSAFE_CONFIG

- description: information about failsave configuration
- code: 75
- command data: none
- reply data:

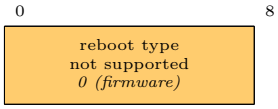


1.23 MSP_REBOOT

- description: reboot the firmware
- code: 68
- command data:

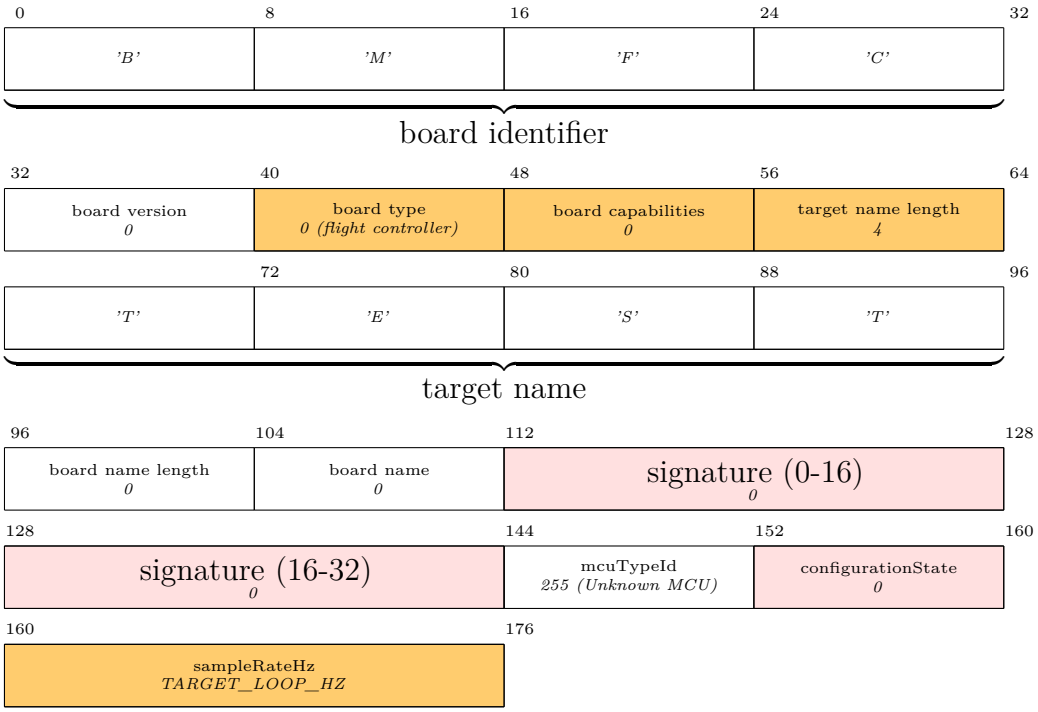


- reply data:



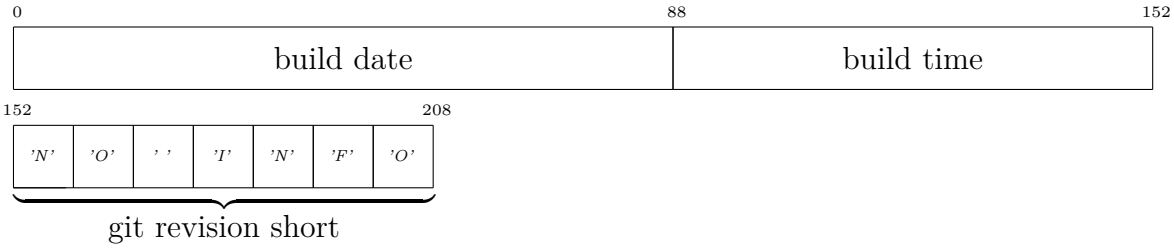
1.24 MSP_BOARD_INFO

- description: information about the used board
- code: 4
- command data: none
- reply data:



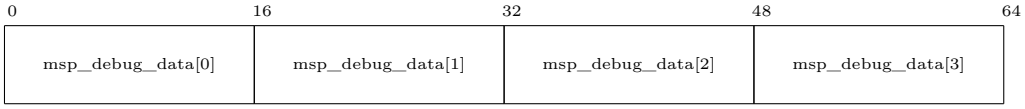
1.25 MSP_BUILD_INFO

- description: information about build date
- code: 5
- command data:
- reply data:



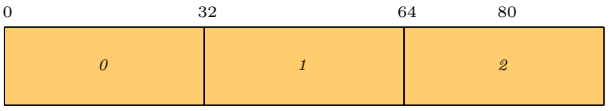
1.26 MSP_DEBUG

- description: print debug information
- code: 254
- command data:
- reply data:



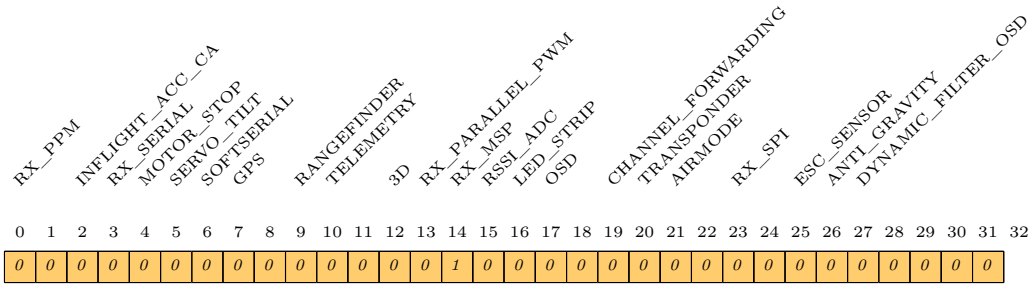
1.27 MSP_UID

- description: unique device identifier
- code: 160
- command data:
- reply data:



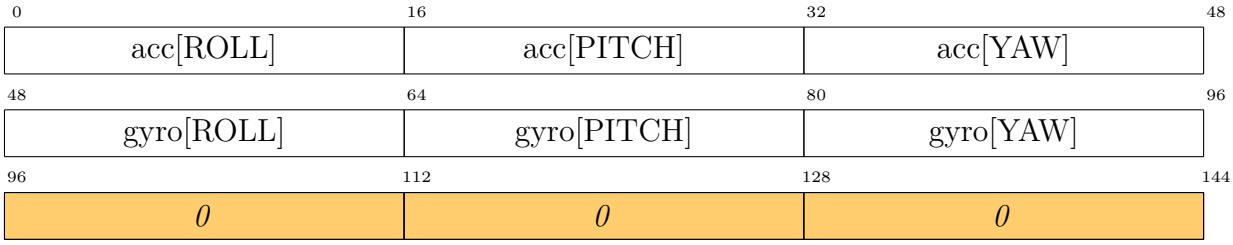
1.28 MSP_FEATURE_CONFIG

- description: get feature mask of fc
- code: 36
- command data:
- reply data:



1.29 MSP_RAW_IMU

- description: get data from the imu input. Here the *Betaflight Configurator* does some scaling we have to take into account.
  - $acc * (1/512)$
  - $gyro * (4/16.4)$
  - $mag * (1/1090)$
- code: 102
- command data: none
- reply data:



1.30 MSP_MOTOR_CONFIG

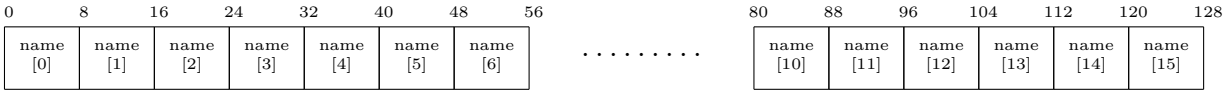
- description: get information motor module
- code: 131
- command data: none
- reply data:

1.31 MSP_ATTITUDE

- description: get information about attitude
- code: 108
- command data: none
- reply data:

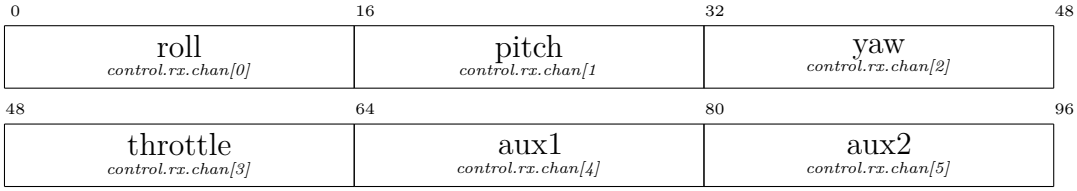
1.32 MSP_NAME

- description: get name of pilot (0-16Bytes), defined with config-PILOTNAME
- code: 10
- command data: none
- reply data:



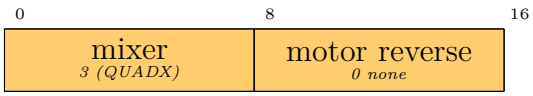
1.33 MSP_RC

- description: get current rx values
- code: 105
- command data: none
- reply data:



1.34 MSP_MIXER_CONFIG

- description: get mixer config
- code: 42
- command data: none
- reply data:



2 Input Commands

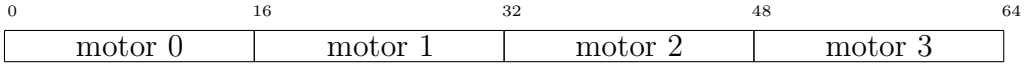
Commands sending data to the flight controller.

2.1 MSP_ACC_CALIBRATION

- description: start accelerometer calibration if flight controller is not armed
- code: 205
- command data: none
- reply data: none

2.2 MSP_SET_MOTOR

- description: set motor command (only for testing => flight controller needs to be disarmed)
- code: 214
- command data:



- reply data: none

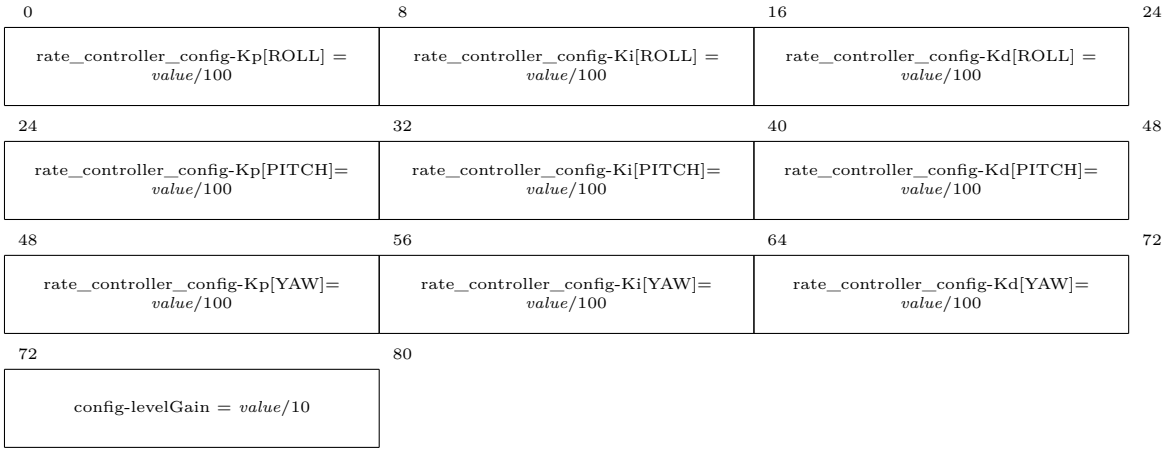
2.3 MSP_SET_MOTOR_CONFIG

- description: set motor module values
- code: 222
- command data:

- reply data: none

2.4 MSP_SET_PID

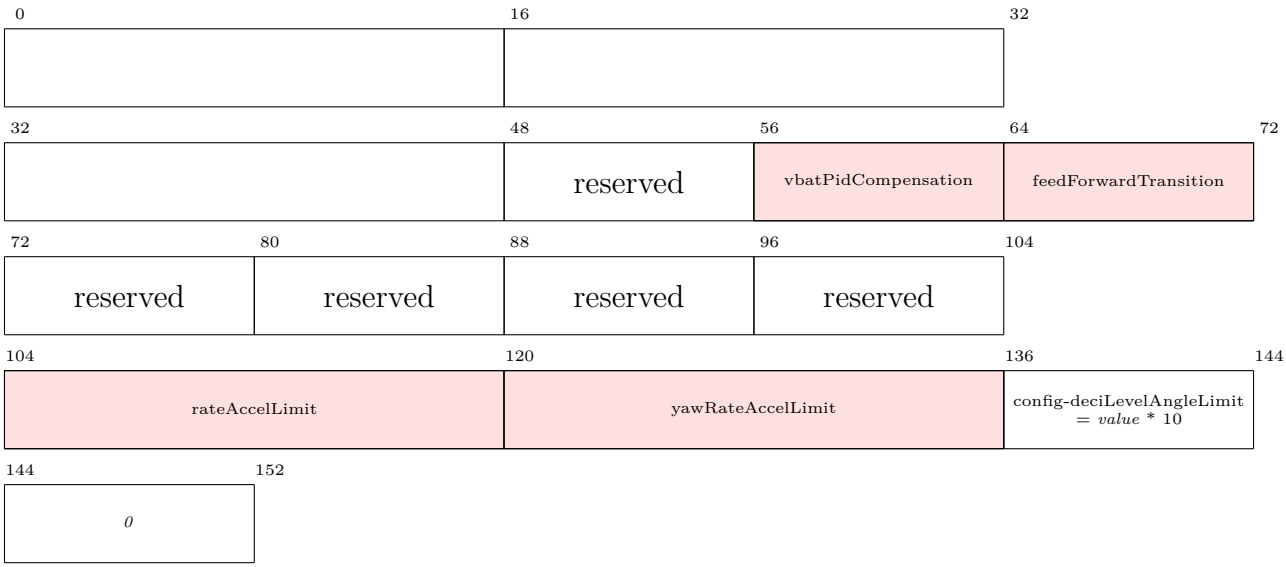
- description: set pid values
- code: 202
- command data:



- reply data: none

2.5 MSP_SET_PID_ADVANCED

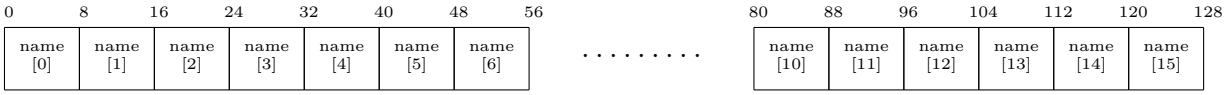
- description: set pid values
- code: 95
- command data:



- reply data: none

2.6 MSP_SET_NAME

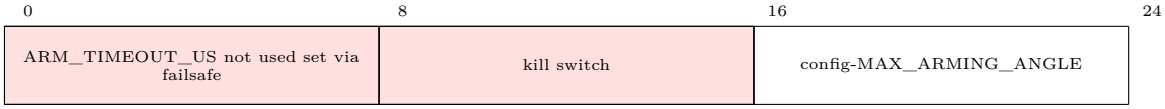
- description: set name of pilot (stored in config-PILOTNAME)
- code: 11
- command data:



- reply data: none

2.7 MSP_SET_ARMING_CONFIG

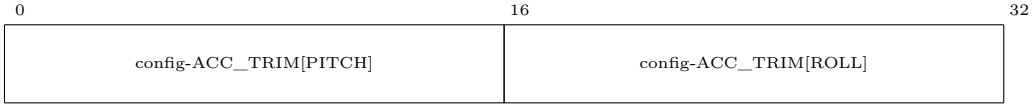
- description: set arming config
- code: 62
- command data:



- reply data: none

2.8 MSP_SET_ACC_TRIM

- description: set accelerometer offset
- code: 239
- command data:



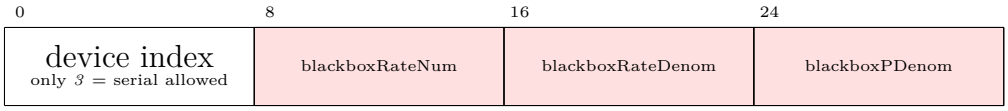
- reply data: none

2.9 MSP_EEPROM_WRITE

- description: save current settings to eeprom
- code: 250
- command data: none
- reply data: none

2.10 MSP_SET_BLACKBOX_CONFIG

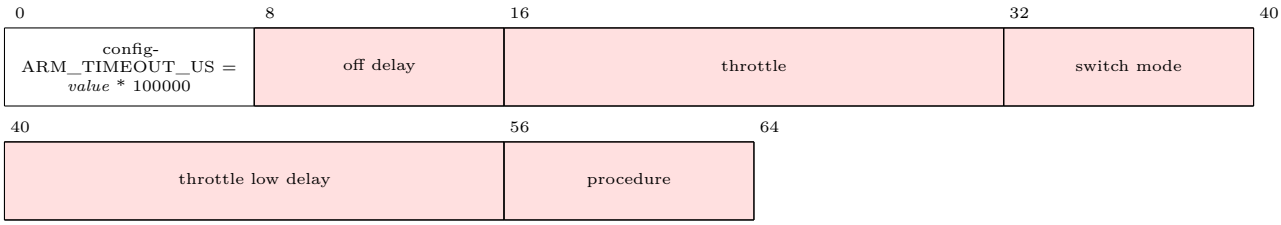
- description: enable disable blackbox logging
- code: 81
- command data:



- reply data: none

2.11 MSP_SET_FAILSAFE_CONFIG

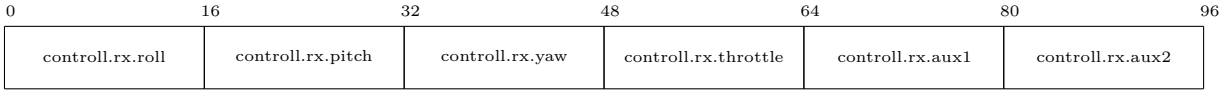
- description: set failsafe config
- code: 76
- command data:



- reply data: none

2.12 MSP_SET_RAW_RC

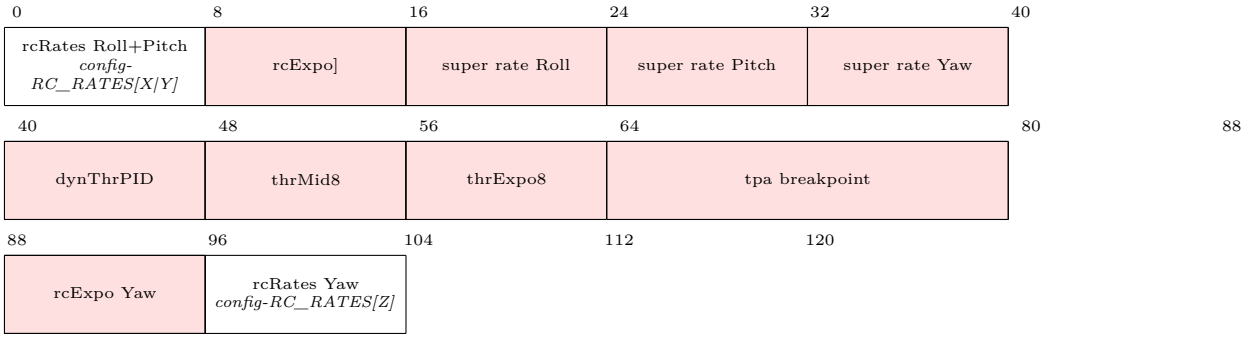
- description: set raw rc values
- code: 200
- command data:



- reply data: none

2.13 MSP_SET_RC_TUNING

- description: set rc tuning
- code: 204
- command data:



3 Additional commands

Additional commands that are not compatible with MultiWii

3.1 MSP_BLACKBOX_START

- description: start blackbox logging
- code: 143
- command data: none
- reply data: none

3.2 MSP_BLACKBOX_STOP

- description: stop blackbox logging
- code: 144
- command data: none
- reply data: none