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Version history

Version	Publish date	Description
1.0.0	06 Jan 2023	Add example to do Connect payload Add example to do Load payload settings Add example to do Set payload settings Add example to do Image capture with the payload Add example to do Video record with the payload Add example to do Get video streaming from payload
1.0.1	25 May 2023	Included Gremsy gSDK to communicate and control gimbal Add examples to move gimbal in Angle mode and Angular rate mode using Mavlink Gimbal Protocol v2
v1.1.0	30 July 2024	Add some examples Get LRF status for VIO Payload define
v2.0.0	16 Aug 2024	Replace gSDK by MAVLINK interface Provide MAVLINK command list Publish resource

Payload mavlink target

Encode a command_long struct	Values	Description
target_system	1	
target_component	191	MAV_COMP_ID_ONBOARD_COMPUTER
chan	0	MAVLink channel

Command mavlink list

Set camera running mode

- Message: COMMAND_LONG (76)

Field Name	Type	Values	Description
target_system	uint8_t	1	System ID
target_component	uint8_t	101 (MAV_COMP_ID_CAMERA2)	MAVLINK Camera Component ID on Web setting
command	uint16_t	MAV_CMD_SET_CAMERA_MODE (530)	MAV_CMD
confirmation	uint8_t	1	
param2	float	0 1	Photo mode Video mode

Set camera record source

- Message: PARAM_EXT_SET (323)

Field Name	Type	Values	Description
target_system	uint8_t	1	System ID
target_component	uint8_t	101 (MAV_COMP_ID_CAMERA2)	MAVLINK Camera Component ID on Web setting
param_id	char[16]	"C_V_REC"	
param_value	char[128]	"0" "1" "2" "5"	Record both Record EO Record IR Record OSD
param_type	uint8_t	5 (MAV_PARAM_EXT_TYPE_UINT32)	MAV_PARAM_EXT_TYPE

Set camera view source

- Message: PARAM_EXT_SET (323)

Field Name	Type	Values	Description
target_system	uint8_t	1	System ID
target_component	uint8_t	101 (MAV_COMP_ID_CAMERA2)	MAVLINK Camera Component ID on Web setting
param_id	char[16]	"C_SOURCE"	
param_value	char[128]	"0" "1" "2" "3" "4"	EO/IR Only EO Only IR IR/EO Sync
param_type	uint8_t	5 (MAV_PARAM_EXT_TYPE_UINT32)	MAV_PARAM_EXT_TYPE

Set EO camera zoom mode

- Message: PARAM_EXT_SET (323)

Field Name	Type	Values	Description
target_system	uint8_t	1	System ID
target_component	uint8_t	101 (MAV_COMP_ID_CAMERA2)	MAVLINK Camera Component ID on Web setting
param_id	char[16]	"C_V_ZM_MODE"	
param_value	char[128]	"0" "2"	Combine Super Resolution
param_type	uint8_t	5 (MAV_PARAM_EXT_TYPE_UINT32)	MAV_PARAM_EXT_TYPE

Set EO camera zoom - Super Resolution

- Message: PARAM_EXT_SET (323)

Field Name	Type	Values	Description
target_system	uint8_t	1	System ID
target_component	uint8_t	101 (MAV_COMP_ID_CAMERA2)	MAVLINK Camera Component ID on Web setting
param_id	char[16]	"C_V_ZM_SR_LV"	

Field Name	Type	Values	Description
param_value	char[128]	"0"	1X
		"1"	2X
		"2"	4X
		"3"	6X
		"4"	8X
		"5"	10X
		"6"	12X
		"7"	14X
		"8"	16X
		"9"	18X
		"10"	20X
		"11"	22X
		"12"	24X
		"13"	26X
		"14"	28X
		"15"	30X
param_type	uint8_t	5 (MAV_PARAM_EXT_TYPE_UINT32)	MAV_PARAM_EXT_TYPE

Set EO camera index zoom - Combine

- Message: PARAM_EXT_SET (323)

Field Name	Type	Values	Description
target_system	uint8_t	1	System ID
target_component	uint8_t	101 (MAV_COMP_ID_CAMERA2)	MAVLINK Camera Component ID on Web setting
param_id	char[16]		"C_V_ZM_CB_LV"
param_value	char[128]	"0"	1X
		"1"	10X
		"2"	20X
		"3"	40X
		"4"	80X
		"5"	120X
		"6"	240X
param_type	uint8_t	5 (MAV_PARAM_EXT_TYPE_UINT32)	MAV_PARAM_EXT_TYPE

Set camera zoom type

- Message: COMMAND_LONG (76)

Field Name	Type	Values	Description
target_system	uint8_t	1	System ID
target_component	uint8_t	101 (MAV_COMP_ID_CAMERA2)	MAVLINK Camera Component ID on Web setting
command	uint16_t	MAV_CMD_SET_CAMERA_ZOOM (531)	MAV_CMD
confirmation	uint8_t	1	
param1	float	0 1 2	ZOOM_TYPE_STEP ZOOM_TYPE_CONTINUOUS ZOOM_TYPE_RANGE
param2	float	-1 for wide, 1 for tele -1 for wide, 1 for tele, 0 to stop zooming A percentage value between 0.0 and 100.0	Zoom one step increment Continuous zoom up/down until stopped Zoom value as proportion of full camera range

Set camera focus type

- Message: COMMAND_LONG (76)

Field Name	Type	Values	Description
target_system	uint8_t	1	System ID
target_component	uint8_t	101 (MAV_COMP_ID_CAMERA2)	MAVLINK Camera Component ID on Web setting
command	uint16_t	MAV_CMD_SET_CAMERA_FOCUS (532)	MAV_CMD
confirmation	uint8_t	1	
param1	float	1 4	FOCUS_TYPE_CONTINUOUS FOCUS_TYPE_AUTO
param2	float	-1: focusing in, 1: focusing out, 0: stop	Continuous focus up/down until stopped

Set camera IR palette

- Message: PARAM_EXT_SET (323)

Field Name	Type	Values	Description
target_system	uint8_t	1	System ID

Field Name	Type	Values	Description
target_component	uint8_t	101 (MAV_COMP_ID_CAMERA2)	MAVLINK Camera Component ID on Web setting
param_id	char[16]	"C_T_PALETTE"	
param_value	char[128]	"0" "1" "2" "3" "4" "5" "6" "7" "8" "9"	F1: WhiteHot ; G1: WhiteHot F1: BlackHot ; G1: Fulgurite F1: Rainbow ; G1: IronRed F1: RainbowHC ; G1: HotIron F1: Ironbow ; G1: Medical F1: Lava ; G1: Arctic F1: Arctic ; G1: Rainbow1 F1: Globow ; G1: Rainbow2 F1: Gradedfire ; G1: Tint F1: Hottest ; G1: BlackHot
param_type	uint8_t	5 (MAV_PARAM_EXT_TYPE_UINT32)	MAV_PARAM_EXT_TYPE

Set payload camera start capture image

- Message: COMMAND_LONG (76)

Field Name	Type	Values	Description
target_system	uint8_t	1	System ID
target_component	uint8_t	101 (MAV_COMP_ID_CAMERA2)	MAVLINK Camera Component ID on Web setting
command	uint16_t	MAV_CMD_IMAGE_START_CAPTURE (2000)	MAV_CMD
confirmation	uint8_t	1	
param2	int	Default, min: 0	Desired elapsed time between two consecutive pictures (in seconds)

Set payload camera stop capture image

- Message: COMMAND_LONG (76)

Field Name	Type	Values	Description
target_system	uint8_t	1	System ID
target_component	uint8_t	101 (MAV_COMP_ID_CAMERA2)	MAVLINK Camera Component ID on Web setting

Field Name	Type	Values	Description
command	uint16_t	MAV_CMD_IMAGE_STOP_CAPTURE (2001)	MAV_CMD
confirmation	uint8_t	1	

Set payload camera start record video

- Message: COMMAND_LONG (76)

Field Name	Type	Values	Description
target_system	uint8_t	1	System ID
target_component	uint8_t	101 (MAV_COMP_ID_CAMERA2)	MAVLINK Camera Component ID on Web setting
command	uint16_t	MAV_CMD_VIDEO_START_CAPTURE (2500)	MAV_CMD
confirmation	uint8_t	1	

Set payload camera stop record video

- Message: COMMAND_LONG (76)

Field Name	Type	Values	Description
target_system	uint8_t	1	System ID
target_component	uint8_t	101 (MAV_COMP_ID_CAMERA2)	MAVLINK Camera Component ID on Web setting
command	uint16_t	MAV_CMD	MAV_CMD_VIDEO_STOP_CAPTURE (2501)
confirmation	uint8_t	1	

Set camera video flip

- Message: PARAM_EXT_SET (323)

Field Name	Type	Values	Description
target_system	uint8_t	1	System ID
target_component	uint8_t	101 (MAV_COMP_ID_CAMERA2)	MAVLINK Camera Component ID on Web setting
param_id	char[16]	"C_V_FLIP"	

Field Name	Type	Values	Description
param_value	char[128]	"2" "3"	On Off
param_type	uint8_t	5 (MAV_PARAM_EXT_TYPE_UINT32)	MAV_PARAM_EXT_TYPE

Set camera video defog

- Message: PARAM_EXT_SET (323)

Field Name	Type	Values	Description
target_system	uint8_t	1	System ID
target_component	uint8_t	101 (MAV_COMP_ID_CAMERA2)	MAVLINK Camera Component ID on Web setting
param_id	char[16]	"C_V_DEFOG"	
param_value	char[128]	"0" "1"	Off On
param_type	uint8_t	5 (MAV_PARAM_EXT_TYPE_UINT32)	MAV_PARAM_EXT_TYPE

Set camera video defog level

- Message: PARAM_EXT_SET (323)

Field Name	Type	Values	Description
target_system	uint8_t	1	System ID
target_component	uint8_t	101 (MAV_COMP_ID_CAMERA2)	MAVLINK Camera Component ID on Web setting
param_id	char[16]	"C_V_DEFOG_LV"	
param_value	char[128]	"0" "1" "2" "3"	Lowest Low Mid High
param_type	uint8_t	5 (MAV_PARAM_EXT_TYPE_UINT32)	MAV_PARAM_EXT_TYPE

Set camera video auto exposure

- Message: PARAM_EXT_SET (323)

Field Name	Type	Values	Description
target_system	uint8_t	1	System ID
target_component	uint8_t	101 (MAV_COMP_ID_CAMERA2)	MAVLINK Camera Component ID on Web setting
param_id	char[16]	"C_V_AE"	
param_value	char[128]	"0" "3" "10" "11" "13"	Auto Manual Shutter Iris Bright
param_type	uint8_t	5 (MAV_PARAM_EXT_TYPE_UINT32)	MAV_PARAM_EXT_TYPE

Set camera video shutter speed

- Message: PARAM_EXT_SET (323)

Field Name	Type	Values	Description
target_system	uint8_t	1	System ID
target_component	uint8_t	101 (MAV_COMP_ID_CAMERA2)	MAVLINK Camera Component ID on Web setting
param_id	char[16]	"C_V_SP"	
param_value	char[128]	"13" "14" "17" "20" "21" "25" "26" "27" "28" "30"	1/10 1/20 1/50 1/100 1/125 1/500 1/725 1/1000 1/1500 1/2000
param_type	uint8_t	5 (MAV_PARAM_EXT_TYPE_UINT32)	MAV_PARAM_EXT_TYPE

Set camera video aperture value

- Message: PARAM_EXT_SET (323)

Field Name	Type	Values	Description
target_system	uint8_t	1	System ID

Field Name	Type	Values	Description
target_component	uint8_t	101 (MAV_COMP_ID_CAMERA2)	MAVLINK Camera Component ID on Web setting
param_id	char[16]	"C_V_IrP"	
param_value	char[128]	0	Aperture value can be set from 0 to 25, step 1
param_type	uint8_t	5 (MAV_PARAM_EXT_TYPE_UINT32)	MAV_PARAM_EXT_TYPE

Set camera video bright value

- Message: PARAM_EXT_SET (323)

Field Name	Type	Values	Description
target_system	uint8_t	1	System ID
target_component	uint8_t	101 (MAV_COMP_ID_CAMERA2)	MAVLINK Camera Component ID on Web setting
param_id	char[16]	"C_V_BrP"	
param_value	char[128]	0	Bright value can be set from 0 to 41, step 1
param_type	uint8_t	5 (MAV_PARAM_EXT_TYPE_UINT32)	MAV_PARAM_EXT_TYPE

Set camera video white balance

- Message: PARAM_EXT_SET (323)

Field Name	Type	Values	Description
target_system	uint8_t	1	System ID
target_component	uint8_t	101 (MAV_COMP_ID_CAMERA2)	MAVLINK Camera Component ID on Web setting
param_id	char[16]	"C_V_WB"	
param_value	char[128]	"0" "1" "2" "3" "4" "5"	Auto Indoor Outdoor One push ATW Manual

Field Name	Type	Values	Description
param_type	uint8_t	5 (MAV_PARAM_EXT_TYPE_UINT32)	MAV_PARAM_EXT_TYPE

Set gimbal mode

- Message: PARAM_EXT_SET (323)

Field Name	Type	Values	Description
target_system	uint8_t	1	System ID
target_component	uint8_t	101 (MAV_COMP_ID_CAMERA2)	MAVLINK Camera Component ID on Web setting
param_id	char[16]	"GB_MODE"	
param_value	char[128]	"0" "1" "2" "3" "4"	OFF LOCK FOLLOW MAPPING RESET
param_type	uint8_t	5 (MAV_PARAM_EXT_TYPE_UINT32)	MAV_PARAM_EXT_TYPE

Set gimbal RC mode

- Message: PARAM_EXT_SET (323)

Field Name	Type	Values	Description
target_system	uint8_t	1	System ID
target_component	uint8_t	101 (MAV_COMP_ID_CAMERA2)	MAVLINK Camera Component ID on Web setting
param_id	char[16]	"RC_MODE"	
param_value	char[128]	"0" "1"	Gremsy Standard
param_type	uint8_t	5 (MAV_PARAM_EXT_TYPE_UINT32)	MAV_PARAM_EXT_TYPE

Set gimbal move to angle

- Message: GIMBAL_DEVICE_SET_ATTITUDE (284)

Field Name	Type	Values	Description

Field Name	Type		Values	Description
target_system	uint8_t		1	System ID
target_component	uint8_t		101 (MAV_COMP_ID_CAMERA2)	MAVLINK Camera Component ID on Web setting
q	float[4]	rad/s	mavlink_euler_to_quaternion(roll, pitch, yaw, q)	Quaternion components, w, x, y, z
angular_velocity_x	float	rad/s	NaN	X component of angular velocity (Roll)
angular_velocity_y	float	rad/s	NaN	Y component of angular velocity (Pitch)
angular_velocity_z	float	rad/s	NaN	Z component of angular velocity (Yaw)

Set gimbal move by speed

- Message: GIMBAL_DEVICE_SET_ATTITUDE (284)

Field Name	Type		Values	Description
target_system	uint8_t		1	System ID
target_component	uint8_t		101 (MAV_COMP_ID_CAMERA2)	MAVLINK Camera Component ID on Web setting
q	float[4]	rad/s	NaN	Quaternion components, w, x, y, z
angular_velocity_x	float	rad/s	Speed roll	X component of angular velocity (Roll)
angular_velocity_y	float	rad/s	Speed pitch	Y component of angular velocity (Pitch)
angular_velocity_z	float	rad/s	Speed yaw	Z component of angular velocity (Yaw)

Do object tracking

- Message: COMMAND_LONG (76)

Field Name	Type	Values	Description
target_system	uint8_t	1	System ID
target_component	uint8_t	26 (MAV_COMP_ID_USER2)	MAVLINK Camera Component ID on Web setting

Field Name	Type	Values	Description
command	uint16_t	31013 (MAV_CMD_USER_4)	Command ID (of command to send)
confirmation	uint8_t	1	
param1	float	1	
param2	float	1	
param3	float	Do not use	
param4	float	0 1	Traking cancel Traking active
param5	float	Do not use	
param6	float	x	Center of the tracking box on the x-axis
param7	float	y	Center of the tracking box on the y-axis

Do object detection

- Message: PARAM_EXT_SET (323)

Field Name	Type	Values	Description
target_system	uint8_t	1	System ID
target_component	uint8_t	101 (MAV_COMP_ID_CAMERA2)	MAVLINK Camera Component ID on Web setting
param_id	char[16]	"TRACK_MODE"	
param_value	char[128]	"0" "1"	Disable Enable
param_type	uint8_t	5 (MAV_PARAM_EXT_TYPE_UINT32)	MAV_PARAM_EXT_TYPE

Get payload camera information

- Message: COMMAND_LONG (76)

Field Name	Type	Values	Description
target_system	uint8_t	1	System ID
target_component	uint8_t	101 (MAV_COMP_ID_CAMERA2)	MAVLINK Camera Component ID on Web setting
command	uint16_t	MAV_CMD_REQUEST_CAMERA_INFORMATION (521)	MAV_CMD

Field Name	Type	Values	Description
confirmation	uint8_t	1	

Get payload camera streaming information

- Message: COMMAND_LONG (76)

Field Name	Type	Values	Description
target_system	uint8_t	1	System ID
target_component	uint8_t	101 (MAV_COMP_ID_CAMERA2)	MAVLINK Camera Component ID on Web setting
command	uint16_t	MAV_CMD_REQUEST_VIDEO_STREAM_INFORMATION (2504)	MAV_CMD
confirmation	uint8_t	1	

Get payload storage

- Message: COMMAND_LONG (76)

Field Name	Type	Values	Description
target_system	uint8_t	1	System ID
target_component	uint8_t	101 (MAV_COMP_ID_CAMERA2)	MAVLINK Camera Component ID on Web setting
command	uint16_t	MAV_CMD_REQUEST_STORAGE_INFORMATION (525)	MAV_CMD
confirmation	uint8_t	1	

Get payload capture status

- Message: COMMAND_LONG (76)

Field Name	Type	Values	Description
target_system	uint8_t	1	System ID
target_component	uint8_t	101 (MAV_COMP_ID_CAMERA2)	MAVLINK Camera Component ID on Web setting

Field Name	Type	Values	Description
command	uint16_t	MAV_CMD_REQUEST_CAMERA_CAPTURE_STATUS (527)	MAV_CMD
confirmation	uint8_t	1	

Get payload camera mode

- Message: COMMAND_LONG (76)

Field Name	Type	Values	Description
target_system	uint8_t	1	System ID
target_component	uint8_t	101 (MAV_COMP_ID_CAMERA2)	MAVLINK Camera Component ID on Web setting
command	uint16_t	MAV_CMD_REQUEST_CAMERA_SETTINGS (522)	MAV_CMD
confirmation	uint8_t	1	