CrossFlight 飞控如何使用 SUI04

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SUI04 模块可以实现向下定高、前后左右四个方向避障以及向上防撞功能。以下是 CrossFlight 和 SUI04 的

使用方法。

第一章 安装模块

1.1 直接连接飞控

SUI04标配一条连CrossFlight/Mini Pix的连接线(4 Pin对 6 Pin), 4 Pin端连接 SUI04, 6 Pin端连接 CrossFlight

的 GPS 口,如下图所示:



1.2 通过 12C 转接板连接飞控

用 CrossFlight 标配的 12C 转接板连接线(6 Pin 对 6 Pin),一端连接飞控的 GPS 口,另一端连接 I2C 转接板。 其次用 SUI04 标配的 12C 口/PIXHAWK 连接线(4 Pin 对 4 Pin),一端接 I2C 转接板,另一端连接 SUI04,如 下图所示:



注: CrossFlight 飞控的 I2C 接口不能同时连接 6 个以上设备,否则有可能会出现数据丢失的现象。

第二章 向下定高功能

2.1 按键设置

要使用模块作为定高功能时,需要通过按键来设置模块的方向为向下,具体操作,按 SUI04 的模块上按键,每按一次按键,模块方向改变一次,按完一次,需要等待模块灯闪烁完,再按第二次,按到模块的灯慢闪 5 次,则代表模块当前的方向为向下。

2.2 参数设置

1. 将 SUI04 与飞控连接。进入-配置/调试界面,点击左侧-全部参数表,在右下角-输入框中输入 RNGFND1_如下 图所示:将 RNGFND1_TYPE 修改成 2 ,点击写入参数。断电重启飞控后飞控即可成功识别 SUI04。

2. 再将 RNGFND1_MAX_CM 设置为 450, RNGFND_MIN_CM 设置为 43(单位: cm), RNGFND1_ORIENT 设置成 25。

命令 🛛 🛆	值	Default	单位	选项	描述	Fav	加载
RNGFND1_ADDR	0	0		0 127	This sets the bus address of the		保存
RNGFND1_FUNCTION	0	0		0:Linear 1:Inverted	Control over what function is		写入参数
RNGFND1_GNDCLEAR	10	10	cm	5 127	This parameter sets the		刷新参数 比较参数
RNGFND1_MAX_CM	450	700	cm		Maximum distance in		 所有单位都会以原始 格式储存,不会被统计
RNGFND1_MIN_CM	43	20	cm		Minimum distance in		3DR_Iris+_AC34. par +
RNGFND1_OFFSET	0	0	v		Offset in volts for zero distance for		加载参数
RNGFND1_ORIENT	25	25		0:Forward	Orientation of rangefinder		重 金 加 重 金 为 默 认 值 世 宏 为 默 认 值 世 宏 为 默 认 值 世 宏 和 一 世 宏 和 ー 世 名 和 ー 世 宏 和 ー 世 宏 和 ー 世 宏 和 ー 世 宏 和 ー 世 名 和 ー 世 名 和 ー 世 名 和 ー 世 名 和 ー 世 名 和 ー 世 名 和 ー 世 名 和 ー 世 名 和 ー 世 名 和 ー ー 世 名 和 ー ー ー 世 名 和 ー ー ー ー ー ー ー ー ー ー ー ー ー ー ー ー ー ー
RNGFND1_PIN	-1	-1		-1:Not Used	Analog or PWM input pin that		RNGFND1_
RNGFND1_POS_X	0	0	m	-5 5	X position of the rangefinder in		Modified None Default
RNGFND1_POS_Y	0	0	m	-5 5	Y position of the rangefinder in		
RNGFND1_POS_Z	0	0	m	-5 5	Z position of the rangefinder in		
RNGFND1_PWRRNG	0	0	m	0 32767	This parameter sets the		
RNGFND1_RMETRIC	1	1		0:No 1:Yes	This parameter sets whether an		
RNGFND1_SCALING	3	3	m/V		Scaling factor between		
RNGFND1_STOP_PIN	-1	-1		-1:Not Used	Digital pin that enables/disables		
RNGFND1_TYPE	2	0		0:None 1:Analog	Type of connected		

RNGFND1_MAX_CM 是飞控在定高模式下能识别模块的最大距离。

RNGFND1_MIN_CM 是飞控在定高模式下能识别模块的最小距离。

当模块发送的距离超过 43~450cm 时,飞控不识别模块的距离,通过气压计的高度来进行定高。

2.3 数据查看

1. 在快速界面查看超声波数据。

将飞控连接地面站,在快速界面,双击选项卡,出来一个大的列表。在列表中选择 sonarrange,则在该位置就 会显示超声波的高度数据。



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	E Contraction of the second se	az2	ch3percent	gen_runtime	rateattitude	^	7		1
飞行数	据 飞行计划	az3	ch4in	gen_speed	rateposition		ютс 🚽	断开ì	车接
S	WW 2	AZT oMAV	ch4out	gen_status	raterc		1	Ø. 1	-
	1	■ battery_cell1	ch5in	gen_voltage	ratesensors				2005
		battery_cell10	🔤 ch5out	GeoFenceDist	ratestatus		1	4	
-		battery_cell11	ch6in	🔲 gimballat	remnoise				Call
		battery_cell12	🔤 ch6out	🔲 gimballng	🔤 remotesnrdb		the second	<u> - 1</u>	141
		battery_cell13	ch7in	🔲 glide_ratio	remrssi			1.	
10		battery_cell14	🔜 ch7out	gpsh_acc	roll				
10		battery_cell2	ch8in	gpsh_acc2	rpm1		0	4	2235
5	-	battery_cell3	🔤 ch8out	gpshdg_acc	🔤 rpm2				
		battery_cell4	ch9in	pshdg_acc2	rssi		1	- 1	(e);
0m/s		battery_cell5	ch9out	pshdop 📄	rxerrors				i e i
		battery_cell6	🔤 climbrate	gpshdop2	rxrssi		1		
-5	-	battery_cell7	connected	gpsstatus	safteyactive		the state		1988
		battery_cell8	crit_AOA	gpsstatus2	satcount				-
-10	-	battery_cell9	current	gpsv_acc	satcount2			1-1	740 -
ration Safety	0.0-	battery_kmleft	current2	gpsv_acc2	satcountB		100	<u>- 1</u>	-
全速	0.0m/s	battery_mahperkm	current3	gpsvel_acc	servovoltege		1		
TUR	0.0m/s	battery_remaining	current4	gpsvel_acc2	🗹 sonarrange		134		
	_	battery_remaining2	current5	gpsyaw	sonarvoltage				35835
		battery_remaining3	current6	gpsyaw2	speedup		· ·		199
	_	battery_remaining4	current7	groundcourse	SSA		100	1 - I	(1
快速	志力作用	battery_remaining5	current8	groundcourse2	target_bearing		Carlos I		्वः
_	~	battery_remaining6	current9	groundspeed	targetairspeed				
	陀螺(battery_remaining/	DistFromMovingBase	groundspeed2	targetalt		-		1000
	-1.(battery_remaining8	DistRSSIRemain		targetaltd100		Sec.1		
	tin tati në	battery_remaining9	DistToHome	gx2	ter_alt				24C
	301	battery_remainmin	distTraveled	gx3	ter_curait				
		battery_remainmin2	efi_baro	 	ter_load				
	Altitude	battery_remainmind	efi_exhasttemp		ter_pend				
	D. 2	battery_remainmin4	efi_fuelconsumed		ter_space				1000
	つの様	battery_remainminb	efi_tueltlow	Evrosq	terrainactive			-	1
	384	battery_remainmin6	efi_fuelpressure		timelnAir		-10772	1010	0.0
		battery_remainmin7	efi_headtemp	gyrosq3	timeInAirMinSec		动干核	到目放	р. ц о

2. 在调试界面显示超声波数据。

勾选地面站的调试选项,双击弹出的动态表格,在列表中选取 sonarrange,即可显示超声波数据的动态波形。

如下图所示:

🔜 ekfflags 🔜 ekfposhor

ekfposvert

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wp_dist



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packetdropremote

🔤 rateatti tude

ch15out

_____ ch16out

____ ch17out

第三章 避障功能

3.1 按键设置

SUI04 模块可以实现水平 4 个方向(前、后、左、右)的避障,需要通过模块的按键来改变模块的方向。模块默认 的方向是向前,当每按一次按键,模块的方向顺时针改变一次,并且模块的灯会闪烁相应的次数(1 次为前、2 次 为右、3 次为后、4 次为左),提示当前模块的方向,并且永远保存该方向作为模块的方向。方向设置好后,模块 需要断电重启。

3.2 参数设置

1. 将 SUI04 与飞控连接。先在全部参数表中搜索 PRX1_TYPE,并将值修改成 4,接着在全部参数表中搜索

命令	△ 值	i	Default	单位	选项	描述					Fav		
PRX1_TYPE		0			0:None 7:LightwareSI	What type of	of proximity	y sensor is c	onnected				
											;		
Mission Planner For Radi	olink 1.3.80 b	build 1.3.8739.3	0101 ArduCo	pter V4.3.7.3 (b1d	975e5)						- a ×		
地理国栏	■-All		^ 🖸	前令	≏liit	Default	单位	遗顷	· 新述	Fav	加報		
基本调参	-ALGE			EK3_RNG_USE_HG					Range Ender can be used as the primary height source when below this percentage of its maximum range (see RINGFNDr. MAX_CM) and the primary height source is Baro or GPS (see EK3_SPD_FDS2). The feature should not be used for termin following as it is designed for vertical takked and landing with climb above the range finder use height before		保存		
扩展调参	- ABGLI D- AEMII	E_NOX NG 0 TANA		RNGFND_FILT					Rangefinder filter to smooth distance. Set to zero to disable filtering	•	写入参数		
标准参数	-ADD -ATC -AUTO	OPTIORS		RNGFND1_TYPE				0.None Analog	Type of connected rangelinder		制新始数 中本条件		
高级参数	AUTO AND_	TINE		RNGFND2_TYPE	2	0		0:None 1:Analog	Type of connected rangelinder	•	所有单位都会以原始		
Onboard OSD	- AV011 - 3A30 - 3A30	D 1 1		RNGFND3_TYPE	2	0		D:None Analog	Type of connected rangefinder	-	· 指式諸符,不需要項的 。		
User Parans	- 34300 - 34300 - 3470	2 G MONTTOR		RNGFND4_TYPE	2	0		0.None 1.Analog	Type of connected rangefinder	•	龙航警教		
全部参数表 《	-BATT	2_MONITOR 3_MONITOR		RNGFND5_TYPE				0 None 1 Analog	Type of connected rangelinder	•	重立为数以值 投索		
Planner	-BATT- BATT	4_MONITOR 5_MONITOR 6 MONITOR		RNGFND6_TYPE	2	0		0:None 1:Analog	Type of connected rangefinder	-	14672760		
	-BATT BATT	T NORITOR B_NORITOR		RNGFND7_TYPE	16			0:None 1:Analog 2:Madatest	Type of connected rangelinder	-	Modified Some Default		
	-908_	TIPE		RINGEND8_TYPE	Q	0		0:None 1:Analog	Type of connected rangelinder				
	313_J	ESABLE P. PSANI PD		RNGFND9_TYPE				0.None 1:Analog	Type of connected rangefinder	-			
	- CIBCI	LI ASS		RNGFNDA_TYPE	0	0		0:None 1:Analog	Type of connected rangeInder	-			
	- DEV_ - DEV_ - DISA	OFTIONS INCIDENT											

RNGFND,将 RNGFNDx_TYPE 修改成 2(x 表示超声波序号)。最后重启飞控。如下图所示:

2. 如下图所示,在全部参数表中搜索 RNGFND1。将 RNGFND1_ADDR 修改成 116, RNGFND1_MAX_CM 修改

成 450, RNGFND1_MIN_CM 修改成 43,将 RNGFND1_ORIENT 修改成 0(0表示超声波方向为向前)

RNGFND1_ADDR					This sets the bus address of the sensor, where applicable. Used for the I2C and DroneCAN sensors to allow for multiple sensors on different addresses.	
RNGFND1_FUNCTION	0	0		0:Linear 1:Inverted 2:Linearbolio	Control over what function is used to calculate distance. For a linear function, the distance is (voltage-offset)'scaling. For a inverted function the distance is (offset-voltage)'scaling. For a hyperbolic function the distance is scaling/(voltage-offset). The functions return the distance in meters.	
RNGFND1_GNDCLEAR			cm	5 127	This parameter sets the expected range measurement (in cm) that the range finder should return when the vehicle is on the ground.	
RNGFND1_MAX_CM	450	700	cm		Maximum distance in centimeters that rangefinder can reliably read	
RNGFND1_MIN_CM		20			Minimum distance in centimeters that rangefinder can reliably read	
RNGFND1_OFFSET	0	0	v		Offset in voits for zero distance for analog rangefinders. Offset added to distance in centimeters for PWM lidars	
RNGFND1_ORIENT		25		0:Forward 1:Forward-Rig	Otientation of rangefinder	

3. 如下图所示,在全部参数表中搜索 RNGFND2。将 RNGFND2_ADDR 修改成 113, RNGFND2_MAX_CM 修改

成 450,	RNGFND2 MIN	CM 修改成 43,	将 RNGFND2	ORIENT 修改成 2	(2表示超声波方向为向右)
///	·····•		13		

RNGFND2_ADDR		0		0 127	This sets the bus address of the sensor, where applicable. Used for the I2C and DroneCAN sensors to allow for multiple sensors on different addresses.	
RNGFND2_FUNCTION	0	0		0:Linear 1:Inverted	Control over what function is used to calculate distance. For a linear function, the distance is (voltage-offset) "scaling. For a inverted function the distance is (offset-voltage) scaling. For a hyperbolic function the distance is scaling/(voltage-offset). The functions return the distance in meters.	
RNGFND2_GNDCLEAR	10	10		5 127	This parameter sets the expected range measurement (in cm) that the range finder should return when the vehicle is on the ground.	
RNGFND2_MAX_CM	450	700	cm		Maximum distance in centimeters that rangefinder can reliably read	
RNGFND2_MIN_CM	43	20			Mnimum distance in centimeters that rangefinder can reliably read	
RNGFND2_OFFSET	0	0	v		Offset in volts for zero distance for analog rangefinders. Offset added to distance in centimeters for PWM lidars	
RNGFND2_ORIENT	2	25		0:Forward 1:Forward-Rig	Otientation of rangefinder	

4. 如下图所示,在全部参数表中搜索 RNGFND3。将 RNGFND3_ADDR 修改成 114, RNGFND3_MAX_CM 修改

成 450, RNGFND3_MIN_CM 修改成 43,将 RNGFND3_ORIENT 修改成 4(4表示超声波方向为向后)



5. 如下图所示,在全部参数表中搜索 RNGFND4。将 RNGFND4_ADDR 修改成 115, RNGFND4_MAX_CM 修改

成 450, RNGFND4_MIN_CM 修改成 43,将 RNGFND4_ORIENT 修改成 6(6表示超声波方向为向左)

RNGFND4_ADDR					This sets the bus address of the sensor, where applicable. Used for the I2C and DroneCAN sensors to allow for multiple sensors on different addresses.	
RNGFND4_FUNCTION	0	0)		0:Linear 1:Inverted 2:Linearbailte	Control over what function is used to calculate distance. For a linear function, the distance is (votage offset)'scaling. For a invested function the distance is (offset-votage)'scaling. For a hyperbolic function the distance is scaling/(votage offset). The functions return the distance in meters.	
RNGFND4_GNDCLEAR					This parameter sets the expected range measurement(in cm) that the range finder should return when the vehicle is on the ground.	
RNGFND4_MAX_CM	450	700	cm		Maximum distance in centimeters that rangefinder can reliably read	
RNGFND4_MIN_CM		20			Mnimum distance in centimeters that rangefinder can reliably read	
RNGFND4_OFFSET	0	0			Offset in volts for zero distance for analog rangefinders. Offset added to distance in centimeters for PWM lidars	
RNGFND4_ORIENT		25		0.Forward 1:Forward-Rig	Orientation of rangelinder	

6. 点击写入参数,并将飞控断电重启。重新连接地面站后,即可识别到 SUI04。

3.3 设置避障距离和打开避障

1. 模块的避障距离可通过改变 AVOID_MARGIN 这个值来设置。

AVOID_MARGIN: 留待模式下的最大避障距离,单位 m

2. 参数设置

在全部参数表搜索 AVOID_MARGIN,将 AVOID_MARGIN 的值改为 3(即 3m,有效值为 1~10),再点击右侧

的-写入参数即可,如下图所示:

Mission Planner For Rat	diolink 1.3.80 build 1.3.8739.301	01 ArduCopter V4.3.7.3 ((b1d975e5)							- 0 x
TATHAN AND A	1								• 11 COM34	5200 ·
地理困栏		S # + + + + + + + + + + + + + + + + + +	_^i≣	Default	单位	违项	羅連		Fav	tast
基本调整	- A353_TTP1 - A05	AVOID_ACCEL_MAX					Maximum acceleration with which obstacles will be avoided with. Set zero to disable acceleration limits			保存
扩展调整	- ASICE_MAX - ASICES5 ASICES5	AVOID_ALT_MIN					Minimum altitude above which proximity based avoidance will start working. This requires a valid downward factr	ig rangefinder reading to work. Set zero to disable		写入参数
标准参数	- ATC - AUTO_OFTICMS	AVDID_ANGLE_MAX	1000	1000	odeg	0 4500	Max lean angle used to avoid obstacles while in non-GPS modes			制度管数 计构参数
高级参数	- AVIDITUSE - AVID_ENABLE	AVDID_BACKUP_DZ	0.1	0.1	n	02	Distance beyond AVOID_MARGIN parameter, after which vehicle will backaway from obstacles. Increase this p	arameter if you see vehicle going back and forth in front of obstacle.		所有单位都会以原始
Onboard OSD	E AVOID E BADJ								-	格式储存,不会被缩放
HAVF tp	E - BAED1 E - BAED2	AVOID_BACKUP_SPD				02	Maximum speed that will be used to back away from obstacles in GPS modes (m/s). Set zero to disable			3BLIris+_ACH para •
User Parans	E- BAED3 - BATT_MONITOR	AVOID_BEHAVE	0	0		1.Stop	Avoidance behaviour (elide or stop)			加加加加加 使要求用的工作
全部參數表	- BATTS_BUSITOR - BATTS_BUSITOR	AVDID_DIST_MAX					Distance from object at which obstacle avoidance will begin in non-GPS modes			授家
Planner	-BAITS_MONITOR -BAITS_MONITOR	AVOID_ENABLE					Enabled/disable avoidance input sources			
	- DAIT7 MOSITOR - DAIT8 MOSITOR	AVOID_MARGIN				2.000	Vehicle will attempt to stay at least this distance (in meters) from objects while in GPS modes			Medified None Default
	- 100,1717 - 100,1717 - 000,1717 - 000,171,100,000 - 000,000,000 - 000,000,000 - 000,000,000 - 000,000,000 - 000,000,000 - 000,000,000 - 000,000 - 000,000							,		

3. 飞控设置 RC7_OPTION 参数。

进入-配置/调试界面,点击左侧-全部参数表,搜索 RC7_OPTION ,将该参数的值设置为 40(物体避障功能),

再点击右侧的-写入参数即可,如下图所示:



4. 遥控器设置

设置遥控器打开和关闭避障功能此项是可选项,可跳过。

飞控默认在留待模式下,避障功能自动打开,切回自稳时,避障功能自动关闭。但是如果想实时通过遥控器来开 启或关闭避障功能,需要进行此项设置。如果想只在定高和留待模式下,自动开启避障功能,可以跳过此项设置。 设置方法如下:

1) 选择一个二挡开关作为控制7通道的开关;

2) 在地面站的初始设置界面下的必要硬件的下拉列表中,左击故障保护,打开即可显示 7 通道的 PWM 值的界

面;

3) 当拨动该开关时,7 通道的 PWM 值大于 1800,代表开关拨动到该位置时,避障功能打开,拨动到另一个方

向是,避障功能关闭。如下图所示:



3.4 数据显示

将飞控与地面站连接,键盘按下 CTRL+F,在弹出窗口点击 Proximity。如下图所示:

🖳 temp					<u> 1900</u>		×
Geo ref images moved to dat	aflash tab	hex Mavlink decode		30 6780	En	Present OK	^
Warning Manager Create custo	m audio warnings	driver clean	remove installed drivers	3D ACCEL	2h		
Follow Me use a nmea g	ps to follow me	Toggle Saftey Switch	virtual press the satey button	30 MAG	En		
NMEA outputs the	mav location in nmea	Message Interval	set custom message interval's for	ABSOLUTE PRESSURE	281	Present OK	
MicroDrone outputs the	mav location in microdrone	MAVLink Inspector	Inspect all mavlink packets being				
Mavlink mirrors the	mavlink stream received by mp	Bootloader Upgrade	update the bootloader	ULPPERENTIAL PRESSURE	DIS		
Param gen regenerate t	he param info used inside mp	3D Map	3d map testing		Dis		
Lang Edit translation	language editor	decode HWID's	display info about a hardware id typed	OFTICALFLOW	Dis		
OSDVideo overlay the	hud into your recorded videos	parse packet bytes	debug a hex string mavlink packet	VISION POSITION	DLa		
Moving Base show an extr	a icon on the map of your	adjust aircraft baro he	modify baro alt reference alt	LASER POST TOOK	En	Freset Ok	
Shp to Poly convert shp	file ot a polygon file	Lockup MAV	cause the autopilot to lockup	EXTERNAL COMPARTMENT	010-		_
Anon Log		DEM	display information about the	EATERNAL VALUE INCO	011		
Swarm multi mav sw	arm interface	logdownload scp	logdownload via scp - ssh (apsync)	ANGULAR RATE CONTROL	Ĩn.	Present Ok	
Follow the leader follow the 1	eader swarm	ReSort All logs	resort all the logs in the MP logging	ATTITUDE STABILIZATION	In:		
MAVSerial pass create a exc.	lusive passthrough to the gps	Custom GDAL	load a custom map tile source via GDAL	TAX POSITION	In.		
Start Remote df Log		sitl streamcombiner		Z ALTITUDE CONTROL	Dis	Present Bad	
Sort TLogs sort tlogs 1:	nto there type and sysid	Param Restore		TY ROST TON CONTROL	Di-	Second Red	
rip all fw download all	current iw s	FFT					
Inject GE add custom 1	magery to mp	grab threads.txt		KOTOR OUTPUTS	£n.	Present Ok	
Clear Custom Maps wipe custom	imagery	reboot pixhawk	reboot the autopilot	RCRECELVER	Dis		
structtest struct conve.	rsion speed test	QNH	adjust the qnh	30 01802	e10		8
DashWare Ureate dashw	are date input file	Sequence Swarm	label49	3D ACCEL2	Dis.		
arm and takeoff quad. arm an	a takeorr	vic	display video stream via vic - usp	30 9462	D1 a	No. Bod	
gimbal test run the gimb	ai pointing aigo	Age Map Data	remove image tiles older than 50 days				
map logs create map j	pg s for all flogs in a dir	Param gen cust	generate aged param data	GEOFEKE	DLa	Present Ok	
Logindex tiog browser	: 1.4. E 11	Signing	maviinkz signing conriguration	ARRS	Dis		
opticalflow calib display the	image data from the px4	extract gps_inject	extract from data from flog	TERBADS	En		
AFJ TOOL		Proximity	a spiay the proximity ui	REVERSENOTOR	DLa		
mag calb log get mag offis	ers from a log	Follow Swarm	swarm styre	LOGGINE	R(+	Xo Bod	-
Uor Vork accol	s gal'd after perer restore	Manage Command List	DEI Mada				
Force Accel Cal Mark accel a	s cal d after param restore	DFU Mode	Dru mode	BATTER	610	Present Ok	
Force Compass Cal Mark mag as	can d'arter param restore			PROXIMITY	En		

如下图所示,可以在弹出窗口中显示超声波数据。



第四章 向上防撞

4.1 按键设置

SUI04 模块支持向上防撞功能向上防撞和避障功能一致,但需要通过按键来设置模块的方向为向上,具体操作,按 SUI04 的模块上按键,按到模块的灯慢闪 6 次,则代表模块当前的方向向上。对应的防撞距离可以前面的方法设置 AVOID_MARGIN(防撞距离)的值即可。

4.2 参数设置

 将 SUI04 与飞控连接。进入-配置/调试界面,点击左侧-全部参数表,在右下角-输入框中输入 PRX1_TYPE,并将 值修改成 4,接着在全部参数表中搜索 RNGFND,将 RNGFNDx_TYPE 修改成 2(x表示超声波序号)。最后重 启飞控。如下图所示:

命令	△ 值	Default	单位	选项	描述					Fav
PRX1_TYPE	4	0		0:None 7:LightwareSf	What type	of proximit	y sensor is o	writed		
Mission Planner For Rat	diolink 1.3.80 build 1.3.87	39.30101 ArduC	opter V4.3.7.3 (b1d	1975e5)					-	- a ×
	n 🔬 🙀 🕹								COM34-	200 · 約开连接
地理国栏	■-All	<u>~</u> 🖻	载令	≏ tüt	Default	单位	透顶	猫迷	Fav	加载
基本调参	-AIGB_TYPE		EK3_RNG_USE_HG				-1 70	Range finder can be used as the primary height source when below this percentage of its maximum range (see RNGPNDr_MAX_CM) and the primary height source is Baro or GPS (see ERG_SRC_POS2). This feature should not be used for terrain following as it is designed for vertical taked and lands with clinb above the range finder use height before and the statement of		保存
扩展调参	-ABGLE MAX		RNGFND_FILT	0.5	0.5	Hz	0.5/	Rangefinder filter to smooth distance. Set to zero to disable filtering	-	写入参数
标准参数	-ATC		RNGFND1_TYPE				0:None	Type of connected rangeInder		制新想教
高级参数	AUTOTINE						0 None		-	比较密数
Onboard OSD	- AVD_ESAILE		RNGFND2_TYPE	2	0		Analog	Type of connected rangeInder		所有单位都会以原始 格式錄存,不会被编放
MAVF tp	8-3430 8-34301		RNGFND3_TYPE				Mone Malog	Type of connected rangefinder	-	
User Params	B-BARDS BATT_MONITOR		RNGFND4_TYPE	2	0		0:None 1:Analog	Type of connected rangefinder	•	加速整数
全部参数表	-BATT2_MONITOR BATT3_MONITOR						0 None 1 Analog	Type of connected rangeInder	•	設定
Planner	- BATTS_MORITOR - BATTS_MORITOR - BATTS MORITOR		RNGFND6_TYPE	2	0		0:None 1:Analog	Type of connected rangeInder		12662730
	-BATT7_MONITOR BATT8_MONITOR		RNGFND7_TYPE	16			0:None 1:Analog	Type of connected rangeInder		Modified None Default
	-BCH_TIPE B-BED		RNGFND8_TYPE	0	0		0:None 1:Analog	Type of connected rangelinder		
	- STS_ESABLE B-CAN CHITE ESABLED		RNGFND9_TYPE				0:None 1:Analog	Type of connected rangeInder		
	E-CIECLE E-CORPASS		RNGFNDA_TYPE	0	0		0:None 1:Analog	Type of connected rangeInder		
	- DEV_OFTLOSS - DEV_OFTLOSS - DISASM_DELAY									

 如下图所示,在全部参数表中搜索 RNGFND。将 RNGFNDx_ADDR(x 表示超声波序号)修改成 117, RNGFNDx_MAX_CM 修改成 450, RNGFNDx_MIN_CM 修改成 43,将 RNGFNDx_ORIENT 修改成 24(24 表示 超声波方向为向上)



4.3 数据查看

由于数据查看窗口只能查看水平方向的距离,因此查看向上模块的数据时,需要通过日志才能查看向上模块的数

据。具体操作如下:

1. 日志下载

通过地面站连接飞控,连接后进行如下操作,进行日志下载。

🖹 🛋 🚓 🍾 Г	×		00	N5 - 115200 -
10516 1001 1062 500 L			链	
. NE 60 75 . NE	94 105 120 SE 150 0 10 20 20 20 11 10 20 0 5 11 10 20 0 5 11 10 5 120 11 10 20 5 11 10 20 5 11 10 20 5 10 10 10 10 10 10 10 10 10 10 10 10 10	22 22 22 22 22 22 25 25 25 25		иредана и и и и и и и и и и и и и и и и и и
日本 	KIF VIDe CFX プロイン 意 能机 達明日志 熱切内存日志 則本 (・) 自动分析 自動分析 序 2		2月1日日日日日日日日日日日日日日日日日日日日日日日日日日日日日日日日日日日日	振至

点击要查看的日志,并点击下载这些日志来下载选中的日志。

Log files:	Output:	
1 2000/1/1 8:05:58 (76439) 2 2018/9/25 14:10:32 (87483) 3 2018/9/25 14:11:50 (156839) 4 2018/9/25 14:23:50 (4882313) 6 2018/9/25 14:23:50 (4882313) 6 2018/9/25 14:26:04 (1572207) 7 2018/9/25 14:31:28 (2482232) 8 2018/9/25 16:14:28 (7658312) 9 2000/1/1 8:16:48 (90112) 10 2000/1/1 8:00:20 (180224) 11 2000/1/1 8:00:56 (567832) 下载全部日志 京本全部日志 第一人称IML 重建IML 重建IML	Getting list of log files Found 12 log files, note: item sizes are just an estimate.	
	NOTE: When posting support querys, please send the .bin fil	e

2. 日志查看

通过下图步骤打开日志文件点击回顾日志,然后打开日志文件。



按下图的1、2步骤进行操作。

😒 Log Brov	wser - 10 2000-1-1 8-00	-20.bin												k.
	Value Graph													
40	RECEDENT AIR: 1 Max: 4 Mean: 2)													4
8.6														
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¥ 2.6-														
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1.0														
	N (* 1		8 teolilize(2)78.05 34355117 3 PX4 mission 8KF2 MU1 Initi	1223634 Ignment complete L al yew alignment complete Mu	0 sit alignment complete					~ `			50	
							ine Number							1
在左侧弦前	1972年1973年) 第764月1日 - 1972年1月日 - 新統四表 加乳日志 - 豆元市地路 - Use Time Fone - U Mode U Prrors U MSG													
-2	-1	0	Type	Length	Name	Format	Columns						• 🚊 INV .	~
0	0001-01-01 0	FMT	128	89	FMT	BBnNZ	Туре	Length	Name	Format	Columns	-	MAG	
1	0001-01-01 0	FMT	129	31	FARM	QNE	TimeUS	Name	Value				MODE MOTE	
2	0001-01-01 0	FMT	130	46	GPS	QBIHBcLLefffB	TimeUS	Status	GMS	GWIk	Mats	₩ор	MSG	
3	0001-01-01 0	FMT	131	46	GPS2	QBIHBcLLefffB	TimeUS	Status	GHIS	GW1k	MSats	HDop	■ NKF1 ■ NKF2 -	4
4	0001-01-01 0	FMT	132	46	GPSB	QBIHBcLLefffB	TimeUS	Status	GNIS	GWIK	RSats	Юор	NKF3	1
5	0001-01-01 0	FMT	193	24	GPA	QCCCCBI	TimeVS	VDop	HAcc	VAcc	SAcc	vv	M NKP5	1
6	0001-01-01 0	FMT	194	24	GPA2	QCCCCBI	TimeUS	VDop	HAcc	VAcc	SAcc	vv	M NKF6	1
7	0001-01-01 0	FMT	195	24	GPAB	QCCCCBI	TimeUS	VD op	HAcc	VAcc	SAcc	vv	NKF8	1
8	0001-01-01 0	FMT			IMU	QEEEEEEIIEBBHH	TimeUS	GyrX	Gyr¥	GyrZ	AceX	AccY	NIQ1	1
9	0001-01-01 0	FMT	134	75	MSG	QZ	TimeUS	Message					NKUZ NKT1	1
10	0001-01-01 0	FMT			RCIN	Q10000000000	TimeUS					C5	mi NKT2 mi PARM	1
11	0001-01-01 0	FMT	136	39	RCOV	Q1000000000	TimeUS	Cl	C2	C3	C4	cs 1	PH PH	1
12	0001-01-01 0	FMT	137	15	RSSI	Q£	TimeUS	RIRSSI					PRX	
13	0001-01-01 0	FMT	139	37	BARO	QffcfIff	TimeUS	Alt	Press	Temp	CRt	SNS	TimeUS Health	F
14	0001-01-01 0	FMT	140	21	FOWR	QEEN	TimeUS	Vec	VServo	Flags			 D0	1
15	0001-01-01 0	FMT	143	45	CMD	QHOMEFEFFFF	TimeUS	CTot	CHun	CId	Prn1	Prn2		1
16	0001-01-01 0	FMT			RAD	QBBBBBHH	TimeUS	RSSI	RemRSSI	TxBuf	Noise	RemNoise	D135	1
17	0001-01-01 0	FMT	146	43	CAN	QIHLLeeeccC	TimeUS	GPSTime	GPSWeek	Lat	Lng	Alt	D225	1
18	0001-01-01 0	FMT	232	43	TRIG	QIHLLeeeccC	TimeUS	GPSTime	GPSWeek	Lat	Lng	Alt Z		1
19	0001-01-01 0	FMT	162	30	ARSP	QffcffB	TimeUS	Airspeed	DiffPress	Temp	RawFress	Offset	√ DVp	1
20	0001-01-01 0	FMT	164		CURR	QfffeHHHHHH	TimeUS	Volt	Curr	CurrTot	Tenp	V1	CDis	1
21	0001-01-01 0	FMT	165	45	CUR2	QEEEc100000K	TimeUS	Volt	Curr	CurrTot	Tenp	V1	RATE RCTN	l
22	0001-01-01 0	FMT			ATT	QccccCCCC	TimeUS	DesRoll	Roll	DesPitch	Pitch	DesYaw .	RCOV	

图表中所示的数据即为超声波检测到的物体的距离。