

Bluetooth communication protocol

General protocol	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Analytical position	
	Data packet header	Command bit_1	Separator symbol	Command bit_2	Separator symbol	Command bit_3	Separator symbol	Command bit_4	Separator symbol	Command bit_6	Separator symbol	Data bit_8	Separator symbol	Data bit_9	Separator symbol	Data bit_10	Separator symbol	Data bit_11	Data Packet tail	Remarks	
stop	\$	0	,	0	,	0	,	0	,	0	,	0	,	0	,	0	,	0	,	#	
run	\$	1	,	0	,	0	,	0	,	0	,	0	,	0	,	0	,	0	,	#	
back	\$	2	,	0	,	0	,	0	,	0	,	0	,	0	,	0	,	0	,	#	
turn left	\$	3	,	0	,	0	,	0	,	0	,	0	,	0	,	0	,	0	,	#	
turn right	\$	4	,	0	,	0	,	0	,	0	,	0	,	0	,	0	,	0	,	#	
spin left	\$	0	,	1	,	0	,	0	,	0	,	0	,	0	,	0	,	0	,	#	
spin right	\$	0	,	2	,	0	,	0	,	0	,	0	,	0	,	0	,	0	,	#	
whistle	\$	0	,	0	,	3	,	0	,	0	,	0	,	0	,	0	,	0	,	#	
accelerate	\$	0	,	0	,	0	,	3	,	0	,	0	,	0	,	0	,	0	,	#	
decelerate	\$	0	,	0	,	0	,	2	,	0	,	0	,	0	,	0	,	0	,	#	
Front servo, turn left	\$	0	,	0	,	0	,	0	,	1	,	0	,	0	,	0	,	0	,	#	
Front servo, turn right	\$	0	,	0	,	0	,	0	,	2	,	0	,	0	,	0	,	0	,	#	
Vertical servo, turn up	\$	0	,	0	,	0	,	0	,	3	,	0	,	0	,	0	,	0	,	#	
Vertical servo, turn down	\$	0	,	0	,	0	,	0	,	4	,	0	,	0	,	0	,	0	,	#	
horizontal servo, turn left	\$	0	,	0	,	0	,	0	,	6	,	0	,	0	,	0	,	0	,	#	
horizontal servo, turn right	\$	0	,	0	,	0	,	0	,	7	,	0	,	0	,	0	,	0	,	#	
horizontal servo reset	\$	0	,	0	,	0	,	0	,	8	,	0	,	0	,	0	,	0	,	#	
Vertical servo reset	\$	0	,	0	,	0	,	0	,	5	,	0	,	0	,	0	,	0	,	#	
sing	\$	0	,	0	,	0	,	0	,	0	,	1	,	0	,	0	,	0	,	#	
light	\$	0	,	0	,	0	,	0	,	0	,	0	,	1	,	0	,	0	,	#	Temporarily not supported
outfire	\$	0	,	0	,	0	,	0	,	0	,	0	,	0	,	1	,	0	,	#	0: none, 1: white, 2: red, 3: green, 4: blue, 5: cyan, 6: magenta, 7: yellow, 8: extinguish
Front servo, reset	\$	0	,	0	,	0	,	0	,	0	,	0	,	0	,	0	,	1	,	#	

Just for Raspberry Pi

Read Sensor return value	ultrasonic				voltage				Grayscale				tracking				infrared obstacle avoidance				Light-seeking			
	Data packet header	Command bit	Separator symbol	Command word	value	Separator symbol	Command word	value	Separator symbol	Command word	value	Separator symbol	Command word	value	Separator symbol	Command word	value	Separator symbol	Command word	value	Separator symbol	Command word	value	Data Packet tail
Remarks	\$	4WD	,	CSB	VALUE	,	PV	VALUE	,	GS	VALUE	,	LF	VALUE	,	HW	VALUE	,	GM	VALUE	,	L1R1	VALUE	#
Eg	\$4WD,CS8125,PV8.3,GS214,LF1011,HW01,GM10#																							

manipulator reading	manipulator1				manipulator2				manipulator3				manipulator4				manipulator5				manipulator6			
	Data packet header	Command bit	Separator symbol	Command word	value	Separator symbol	Command word	value	Separator symbol	Command word	value	Separator symbol	Command word	value	Separator symbol	Command word	value	Separator symbol	Command word	value	Separator symbol	Command word	value	Data Packet tail
Remarks	\$	4WD	,	J1	VALUE	,	J2	VALUE	,	J3	VALUE	,	J4	VALUE	,	J5	VALUE	,	J6	VALUE	,	0°-180°	VALUE	#

Gyro reading	MPU6050				MPU6050				MPU6050				MPU6050				MPU6050							
	Data packet header	Command bit	Separator symbol	Command word	value	Separator symbol	Command word	value	Separator symbol	Command word	value	Separator symbol	Command word	value	Separator symbol	Command word	value	Separator symbol	Command word	value	Separator symbol	Command word	value	Data Packet tail
Remarks	\$	4WD	,	MPUgx	VALUE	,	MPUgy	VALUE	,	MPUgz	VALUE	,	MPUax	VALUE	,	MPUay	VALUE	,	MPUaz	VALUE	,	VALUE	VALUE	#

manipulator reading	manipulator1				manipulator2				manipulator3				manipulator4				manipulator5				manipulator6			
	Data packet header	Command bit	Separator symbol	Command word	value	Separator symbol	Command word	value	Separator symbol	Command word	value	Separator symbol	Command word	value	Separator symbol	Command word	value	Separator symbol	Command word	value	Separator symbol	Command word	value	Data Packet tail
Remarks	\$	4WD	,	ServoJ1	VALUE	,	J2	VALUE	,	J3	VALUE	,	J4	VALUE	,	J5	VALUE	,	J6	VALUE	,	0°-180°	VALUE	#

control servo PTZ	PTZ Servo					
	Data packet header	Command bit	Separator symbol	Command word	value	Data Packet tail
Remarks	\$	4WD	,	PTZ	VALUE	#

control colorLED	R				G				B						
	Data packet header	Command bit	Separator symbol	Command word	value	Separator symbol	Command word	value	Separator symbol	Command word	value	Separator symbol	Command word	value	Data Packet tail
Remarks	\$	4WD	,	CLR	VALUE	,	CLG	VALUE	,	CLB	VALUE	,	VALUE	VALUE	#

Choose mode	choose mode					
	Data packet header	Command bit	Separator symbol	Command word	value	Data Packet tail
Remarks	\$	4WD	,	MODE	VALUE	#
Eg	\$4WD,MODE31# open obstacle avoidance mode				10_11°-60_61	second bit: 0--close 1--open
	\$4WD,MODE30# close obstacle avoidance mode				10: remote control mode	
					20: tracking mode	
					30: obstacle avoidance mode	
					40: color led	
					50: light-seeking mode	
					60: extinguish	