DroneCAN

DroneCAN is the primary CAN protocol used by the ArduPilot and PX4 projects for communication with CAN peripherals. It is an open protocol with open communication, specification and multiple open implementations.

SUPPORTS

ARDUPILOT / PX4 autopilot

Relationship with UAVCAN

DroneCAN was created to continue the development of the widely used UAVCAN v0.0 protocol. This protocol has proven itself as robust and feature rich and has been widely deployed in the commercial drone industry and enjoys broad support among industry partners. The proposed introduction of the UAVCAN v1 protocol involved changes to UAVCAN that increased complexity and did not offer a smooth migration path for existing deployments. After extended discussions within the UAVCAN consortium it was decided that the best solution was to continue development of DroneCAN v0 under the name DroneCAN.

HITEC COMMERCIAL SOLUTIONS

NEW For HITEC DroneCAN / CAN Servo Actuators (V.1.9)

- DNA – DYNAMIC NODE ALLOCATION for assignment of CAN node ID's.
- PARAMETER SERVICE- Servo Parameters and Firmware upgrades can be implemented with DRONECAN GUI (or other ArduPilot config tool) or AUTOPILOT.
- Additional Data Reporting to bus

DroneCAN / CanServo / ParamService / List

Name	Min	Max	Default	Comment
ServoID	0	127	0	SET VIA PARAMETER SERVICE
NodeID	0	127	0	DYNAMIC NODE ALLOCATION (DNA)
CAN_BAUDRATE	0	8	0	0=1000 kbps
				1=800 kbps
				2=750 kbps
				3=500 kbps
				4=400 kbps
				5=250 kbps
				6=200 kbps
				7=150 kbps
				8=125 kbps
UNITLESS_RADIAN_MODE	0	1	0	0=UNITLESS
				1=RADIAN
STREAM_TIME(ms)	0	65535	0	
STREAM_MODE	0	1	0	0=OFF
				1=ON
DEADBAND	0	65535	4	Position error range to Turn off Motor
				4096 = 90 deg
INERTIA	0	4095	1	0=off
				1=auto
				2~4095=manual
				(4095 = 100%)
VOLTAGE_MAX(10mV)	0	65535	0	0 = off
VOLTAGE_MIN(10mV)	0	65535	0	0 = off
TEMPER_MAX('C)	0	65535	0	0 = off
TEMPER_MIN('C)	0	65535	0	0 = off
ECHO	0	65535	0	reset to 0
USER1	0	65535	0	User Value
USER2	0	65535	0	User Value
SPEED_MAX	0	32767	depends on the product	
TORQUE_MAX	0	4095	4095	0=0%
				4095=100%
OLP_TIME(sec)	0	65535	3	Over Load Protection: Time
OLP_RATE(%)	0	100	100	Over Load Protection: Rate
TIME_UP(ms)	0	65535	0	Time Speed Up: 0% to 100%
TIME_DN(ms)	0	65535	0	Time Speed Down: 100% to 0%
TIME_ES(ms)	0	65535	0	Time Speed Down in Emegency Stop: 100% to 0%
SPEED_VOLTAGE(100mV)	0	65535	depends on the product	Voltage that is the reference for actual speed
POSITION_MID	0	16383	8192	
POSITION_MIN_LIMIT	0	16383	5462	-60 deg
POSITION_MAX_LIMIT	0	16383	10922	+60 deg
EMG_POS_MAX	0	16383	0	
EMG_POS_MIN	0	16383	0	
ENABLE_START_POSITION	0	1	0	
START_POSITION	0	16383		
ENABLE_FAILSAFE_POSITION	0	1	0	
FAILSAFE_POSTION	0	16383	0	
FAILSAFE_TIME(msec)	0	65535	0	
ENABLE BRAKE_INSTEAD_ FREE(BLDC)	0	1	0	BLDC Only
ENABLE_OVERVOLT_BRAKE	0	1	0	
BRAKE_VOLT(10mV)	0	65535	0	
ENABLE_2PHASE_BRAKE	0	1	0	BLDC Only
PRODUCT_NO	0	65535	depends on the product	
APP VERSION				YYYYMMDDRRV1V2V3
				2.02203E+15
				-> 2022_03_02_01 03-09-00
PARAM VERSION				YYYYMMDDRR
				2022030201
				-> 2022_03_02_01
SPEC_POWER	0	-	depends on the product	0.01W, 1000 = 10.00W / *Current Circuit Needed
ENABLE_PEAK_POWER_RATE	0	1	0	*Current Circuit Needed
PEAK_POWER_RATE	0	2000	0	%% / *Current Circuit Needed