



AN403 – Application Note

UAV Specific CAN Bus Protocol for PE3 Series ECUs

Release Date 6/1/14

Firmware/Software Version:	PE3 V3.04.19 and higher
Relevant Hardware:	PE3 controllers with installed CAN Bus
Additional Notes:	<p>To broadcast the following UAV Specific CAN messages configure the following in peMonitor:</p> <ul style="list-style-type: none">Go to 'Engine' – 'Setup UAV'. Note: You must enable 'UAV Features' before the 'Setup UAV' option is available. Contact PE or review the appropriate Application Note for instructions to do this.Click the 'Enable' button in the 'UAV Setup' window.Go to 'Data Acquisition' – 'Can Bus Setup'.Set the 'Bus Speed' to 1000 kbit/sec.Save these changes to the ECU. The PE3 will now broadcast the messages below on the CAN Bus. <p>The PE3 ECU contains a 120 ohm termination resistor.</p>

CAN Bus Details

- 1000 kbps Rate
- All 2 byte data is stored [LowByte, HighByte]
 $Num = HighByte * 256 + LowByte$
- Conversion from 2 bytes to signed int is per the following:
 $Num = HighByte * 256 + LowByte$
if (Num > 32767) then
 $Num = Num - 65536$
endif

CAN ID (hex)	Piccolo Name	Rate (ms)	Start Position	Length	Parameter	units	Resolution	Range	Type
0 X 0880	External ECU fast telemetry	20	1-2	2 bytes	RPM	rpm	1 rpm/bit	0 - 30,000 rpm	unsigned int
		20	3-4	2 bytes	Fuel Flow	grams/hr	1 gram/hr/bit	0 - 30,000 grams/hr	unsigned int
		20	5-6	2 bytes	EGT 1	C	0.1 C/bit	0 - 3000 C	unsigned int
		20	7-8	2 bytes	EGT 2	C	0.1 C/bit	0 - 3000 C	unsigned int
0 X 0881	External ECU slow telemetry 1	1000	1	1 byte	Voltage	Volts	0.1 volts/bit	0 - 25.5	unsigned char
		1000	2	1 byte	TPS	percent	1 percent /bit	0 - 100	unsigned char
		1000	3-4	2 bytes	CHT1	C	0.1 C/bit	-3000 to 3000	signed int
		1000	5-6	2 bytes	CHT2	C	0.1 C/bit	-3000 to 3000	signed int
		1000	7-8	2 bytes	MAP	Pa	2 Pa/bit	0 - 131070 Pa	unsigned int