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| First Revision, Sign and Date Bln 2018-03-08 | Updated Revision, Sign and Date Bln 2021-05-17 | Document Status and Sign Approved Lan |
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| Document and Product Description Interfacing Ecu Master EMU & Black to TTT802 Gearshift Controller | | |

Adjust Settings in the Ecu Master EMU according to this information...

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Interfacing Ecu Master EMU Classic to TTT802 Gearshift Controller



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Interfacing Ecu Master EMU to TTT802 Gearshift Controller



- Page 12-15

Interfacing Ecu Master Black to TTT802 Gearshift Controller





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Interfacing Ecu Master EMU & Black to TTT802 Gearshift Controller

Ecumaster EMU CLASSIC Client

File Edit Desktops Tools Window Help

The screenshot shows the Ecumaster EMU CLASSIC Client software interface. On the left is a configuration tree with various settings. The 'Sport' category is expanded, and 'Gear Cut' is highlighted. On the right, a 'logs' window is open, displaying a table of sensor data.

| Name | Value | Unit |
|-----------------|-------|------|
| RPM | 0 | RPM |
| MAP | 0 | kPa |
| BARO | 0 | kPa |
| TPS | 0 | % |
| IAT | 0 | °C |
| CLT | 0 | °C |
| Battery voltage | 0 | V |
| Oil pressure | 0 | Bar |
| Oil temperature | 0 | °C |
| Fuel pressure | 0 | Bar |
| Fuel level | 0 | % |
| ECU State | 0 | |
| ECU Reset | 0 | |



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Ecumaster EMU CLASSIC Client

File Edit Desktops Tools Window Help

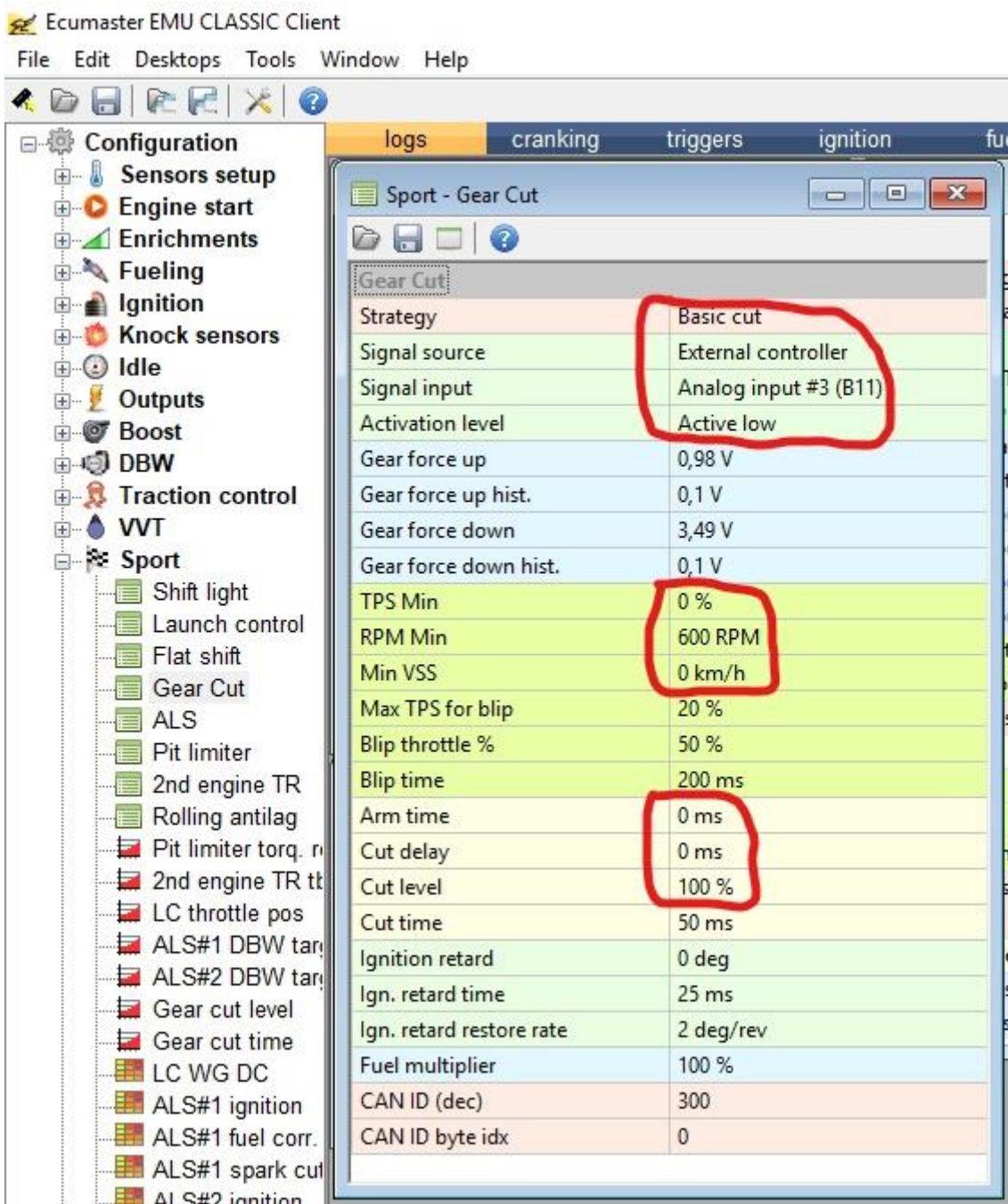
| Parameter | Value |
|--------------------------|--------------------------------|
| Strategy | Basic cut |
| Signal source | External controller |
| Signal input | None |
| Activation level | None |
| Gear force up | Analog input #1 (B20) |
| Gear force up hist. | Analog input #2 (B3) |
| Gear force down | Analog input #3 (B11) |
| Gear force down hist. | Analog input #4 (B19) |
| TPS Min | Analog input #1 inverted (B20) |
| RPM Min | Analog input #2 inverted (B3) |
| Min VSS | Analog input #3 inverted (B11) |
| Max TPS for blip | Analog input #4 inverted (B19) |
| Blip throttle % | MUX switch 1 |
| Blip time | MUX switch 2 |
| Arm time | MUX switch 3 |
| Cut delay | MUX switch 1 inverted |
| Cut level | MUX switch 2 inverted |
| Cut time | MUX switch 3 inverted |
| Ignition retard | CAM #2 input |
| Ign. retard time | CAM #2 input inverted |
| Ign. retard restore rate | CAN Analog #1 |
| Fuel multiplier | CAN Analog #2 |
| CAN ID (dec) | CAN Analog #3 |
| CAN ID byte idx | CAN Analog #4 |
| | 0 |

Use one of the four Analog inputs inverted for the Cut output from TTT802



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Interfacing Ecu Master EMU & Black to TTT802 Gearshift Controller



Wire connections.

Use extension cable (TTT Part # 12-650-6) to interface the Ecu Master EMU with the TTT802 cable harness (TTT Part # 12-630-8 or 12-631-7 or 12-633-5).

Red – Cut Open Collector – connects to one of the Ecu Master EMU Analog input Inverted Pin B20, B3, B11, B19, also connect a 2k2 resistor from the used input to +5V supply B23.



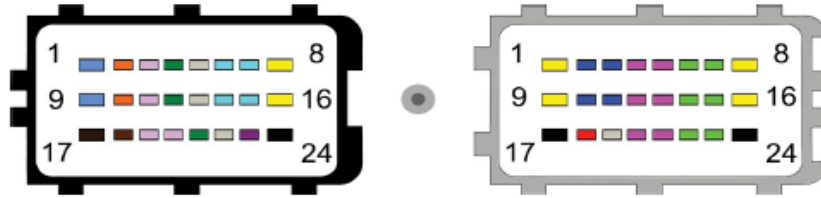
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Blue – Cut Gnd – connect to Ecu Master EMU Sensor Ground Pin B18

White – Ign pulse – connect to Ecu Master EMU Tacho Output Pin G20 Aux 4

Black - Gnd Ign pulse – connect to Ecu Master EMU ECU Ground Pin B17

CONNECTOR PINOUT DETAILS

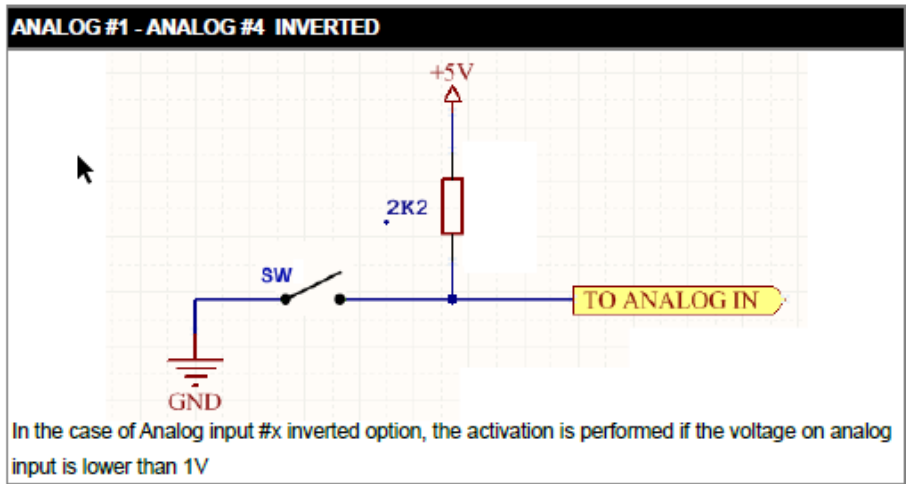


Device View

| BLACK | | GRAY | |
|-------|--------------------|------|----------------------------|
| 1 | EGT In #1 | 1 | Ignition coil #6 |
| 2 | Knock Sensor In #1 | 2 | Stepper motor #1 winding A |
| 3 | Analog In #2 | 3 | Stepper motor #2 winding A |
| 4 | CLT In | 4 | AUX 6 |
| 5 | WBO Vs | 5 | AUX 3 |
| 6 | Camsync In #2 | 6 | Injector #4 |
| 7 | Primary trigger In | 7 | Injector #1 |
| 8 | Ignition coil #5 | 8 | Ignition coil #1 |
| 9 | EGT In #2 | 9 | Ignition coil #3 |
| 10 | Knock Sensor In #2 | 10 | Stepper motor #1 winding B |
| 11 | Analog In #3 | 11 | Stepper motor #2 winding B |
| 12 | TPS In | 12 | AUX 5 |
| 13 | WBO Ip | 13 | AUX 2 |
| 14 | VSS In | 14 | Injector #5 |
| 15 | Camsync #1 | 15 | Injector #2 |
| 16 | Ignition coil #4 | 16 | Ignition coil #2 |
| 17 | ECU Ground | 17 | Power Ground |
| 18 | Sensor Ground | 18 | Power +12V |
| 19 | Analog In #4 | 19 | WBO Heater |
| 20 | Analog In #1 | 20 | AUX 4 / Tacho |
| 21 | IAT In | 21 | AUX 1 |
| 22 | WBO Vs/Ip | 22 | Injector #6 |
| 23 | +5V supply | 23 | Injector #3 |
| 24 | Power Ground | 24 | Power Ground |



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Ecumaster EMU CLASSIC Client

File Edit Desktops Tools Window Help

The screenshot shows the Ecumaster EMU CLASSIC Client software interface. On the left is a configuration tree with the following items: Configuration, Sensors setup, Engine start, Enrichments, Fueling, Ignition, Knock sensors, Idle, Outputs, Boost, DBW, Traction control, VVT, Sport (circled in red), Shift light, Launch control, Flat shift, Gear Cut (circled in red), ALS, Pit limiter, 2nd engine TR, Rolling antilag, and Pit limiter torque. The 'Sport' category is expanded, and 'Gear Cut' is selected. On the right, there are two data tables. The top table, titled 'Basic', has columns for Name, Value, and Unit, and lists various sensors with values of 0. The bottom table, titled 'Boost', also has columns for Name, Value, and Unit, but only the header is visible.

| Name | Value | Unit |
|-----------------|-------|------|
| RPM | 0 | RPM |
| MAP | 0 | kPa |
| BARO | 0 | kPa |
| TPS | 0 | % |
| IAT | 0 | °C |
| CLT | 0 | °C |
| Battery voltage | 0 | V |
| Oil pressure | 0 | Bar |
| Oil temperature | 0 | °C |
| Fuel pressure | 0 | Bar |
| Fuel level | 0 | % |
| ECU State | 0 | |
| ECU Reset | 0 | |

| Name | Value | Unit |
|------|-------|------|
|------|-------|------|



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Interfacing Ecu Master EMU & Black to TTT802 Gearshift Controller

Ecumaster EMU CLASSIC Client

File Edit Desktops Tools Window Help

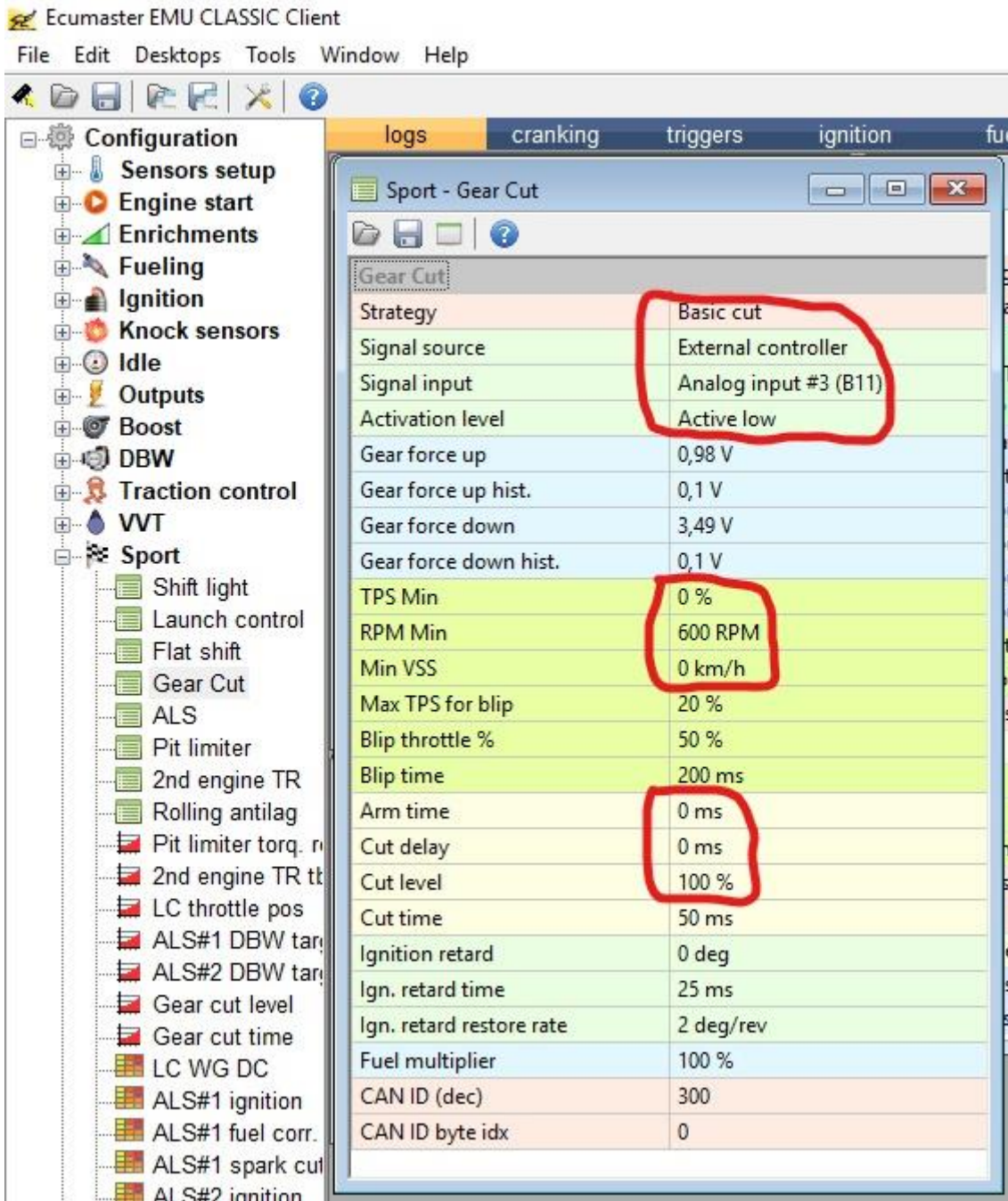
| Parameter | Value |
|--------------------------|--------------------------------|
| Strategy | Basic cut |
| Signal source | External controller |
| Signal input | None |
| Activation level | None |
| Gear force up | Analog input #1 (B20) |
| Gear force up hist. | Analog input #2 (B3) |
| Gear force down | Analog input #3 (B11) |
| Gear force down hist. | Analog input #4 (B19) |
| TPS Min | Analog input #1 inverted (B20) |
| RPM Min | Analog input #2 inverted (B3) |
| Min VSS | Analog input #3 inverted (B11) |
| Max TPS for blip | Analog input #4 inverted (B19) |
| Blip throttle % | MUX switch 1 |
| Blip time | MUX switch 2 |
| Arm time | MUX switch 3 |
| Cut delay | MUX switch 1 inverted |
| Cut level | MUX switch 2 inverted |
| Cut time | MUX switch 3 inverted |
| Ignition retard | CAM #2 input |
| Ign. retard time | CAM #2 input inverted |
| Ign. retard restore rate | CAN Analog #1 |
| Fuel multiplier | CAN Analog #2 |
| CAN ID (dec) | CAN Analog #3 |
| CAN ID byte idx | CAN Analog #4 |
| | 0 |

Use one of the four Analog inputs inverted for the Cut output from TTT802



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Interfacing Ecu Master EMU & Black to TTT802 Gearshift Controller



Wire connections.

Use extension cable (TTT Part # 12-650-6) to interface the Ecu Master EMU with the TTT802 cable harness (TTT Part # 12-630-8 or 12-631-7 or 12-633-5).

Red – Cut Open Collector – connects to one of the Ecu Master EMU Analog input Inverted Pin B20, B3, B11, B19, also connect a 2k2 resistor from the used input to +5V supply B23.



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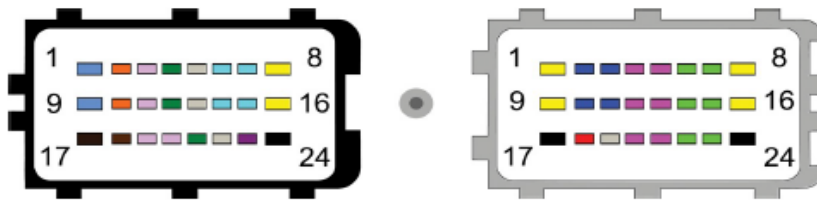
Interfacing Ecu Master EMU & Black to TTT802 Gearshift Controller

Blue – Cut Gnd – connect to Ecu Master EMU Sensor Ground Pin B18

White – Ign pulse – connect to Ecu Master EMU Tacho Output Pin G20 Aux 4

Black - Gnd Ign pulse – connect to Ecu Master EMU ECU Ground Pin B17

CONNECTOR PINOUT DETAILS

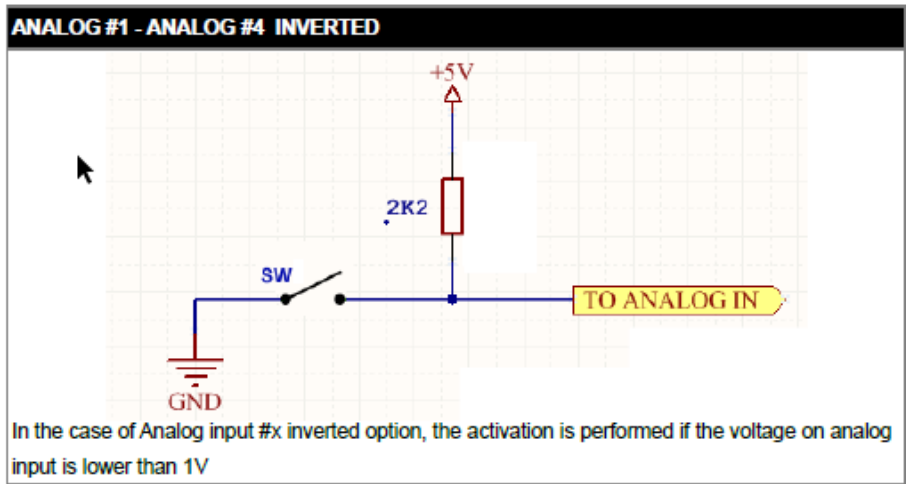


Device View

| BLACK | | GRAY | |
|-------|--------------------|------|----------------------------|
| 1 | EGT In #1 | 1 | Ignition coil #6 |
| 2 | Knock Sensor In #1 | 2 | Stepper motor #1 winding A |
| 3 | Analog In #2 | 3 | Stepper motor #2 winding A |
| 4 | CLT In | 4 | AUX 6 |
| 5 | WBO Vs | 5 | AUX 3 |
| 6 | Camsync In #2 | 6 | Injector #4 |
| 7 | Primary trigger In | 7 | Injector #1 |
| 8 | Ignition coil #5 | 8 | Ignition coil #1 |
| 9 | EGT In #2 | 9 | Ignition coil #3 |
| 10 | Knock Sensor In #2 | 10 | Stepper motor #1 winding B |
| 11 | Analog In #3 | 11 | Stepper motor #2 winding B |
| 12 | TPS In | 12 | AUX 5 |
| 13 | WBO Ip | 13 | AUX 2 |
| 14 | VSS In | 14 | Injector #5 |
| 15 | Camsync #1 | 15 | Injector #2 |
| 16 | Ignition coil #4 | 16 | Ignition coil #2 |
| 17 | ECU Ground | 17 | Power Ground |
| 18 | Sensor Ground | 18 | Power +12V |
| 19 | Analog In #4 | 19 | WBO Heater |
| 20 | Analog In #1 | 20 | AUX 4 / Tacho |
| 21 | IAT In | 21 | AUX 1 |
| 22 | WBO Vs/Ip | 22 | Injector #6 |
| 23 | +5V supply | 23 | Injector #3 |
| 24 | Power Ground | 24 | Power Ground |



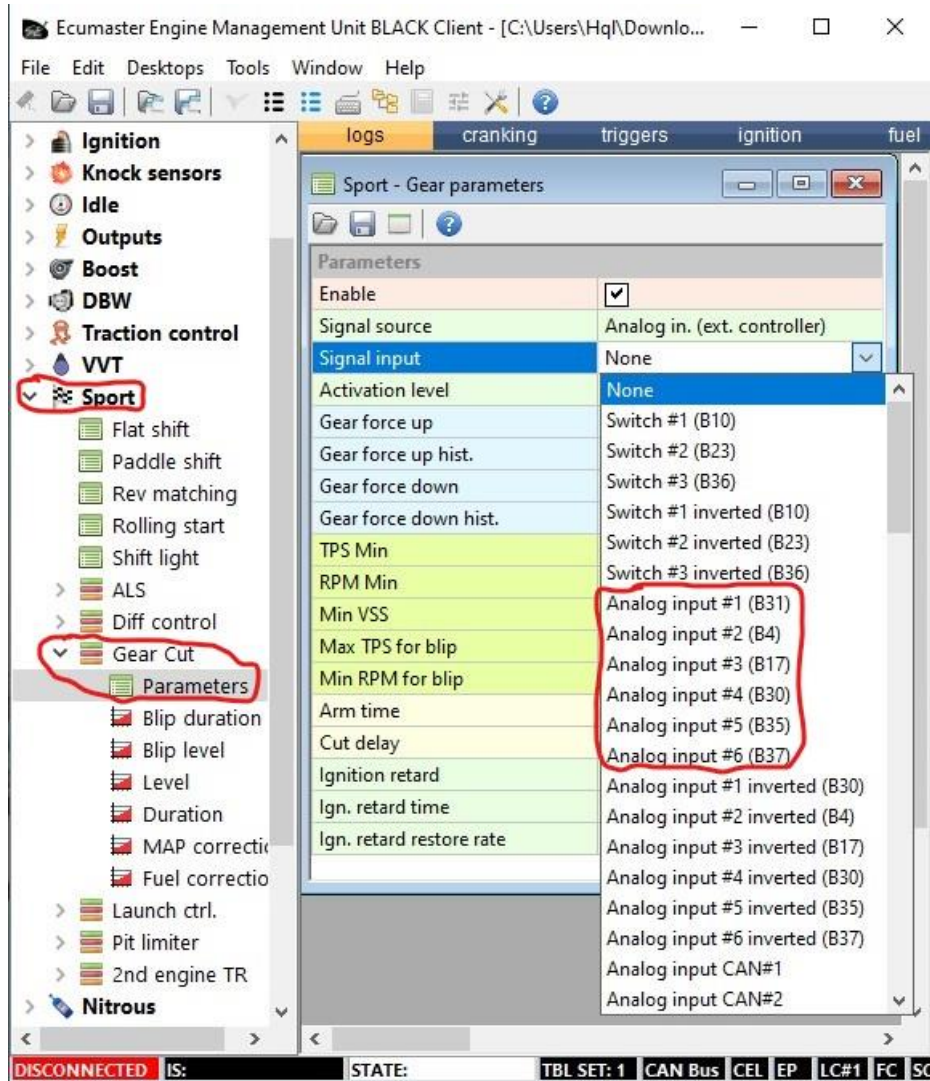
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Interfacing Ecu Master EMU Black to TTT802 Gearshift Controller Adjust Settings in the Ecu Master EMU Black according to this information...



Use one of the six Analog inputs for the Cut output from TTT802



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Interfacing Ecu Master EMU & Black to TTT802 Gearshift Controller

The screenshot shows the 'Sport - Gear parameters' configuration window in the Ecumaster software. The 'Parameters' section is expanded, and several values are highlighted with red boxes:

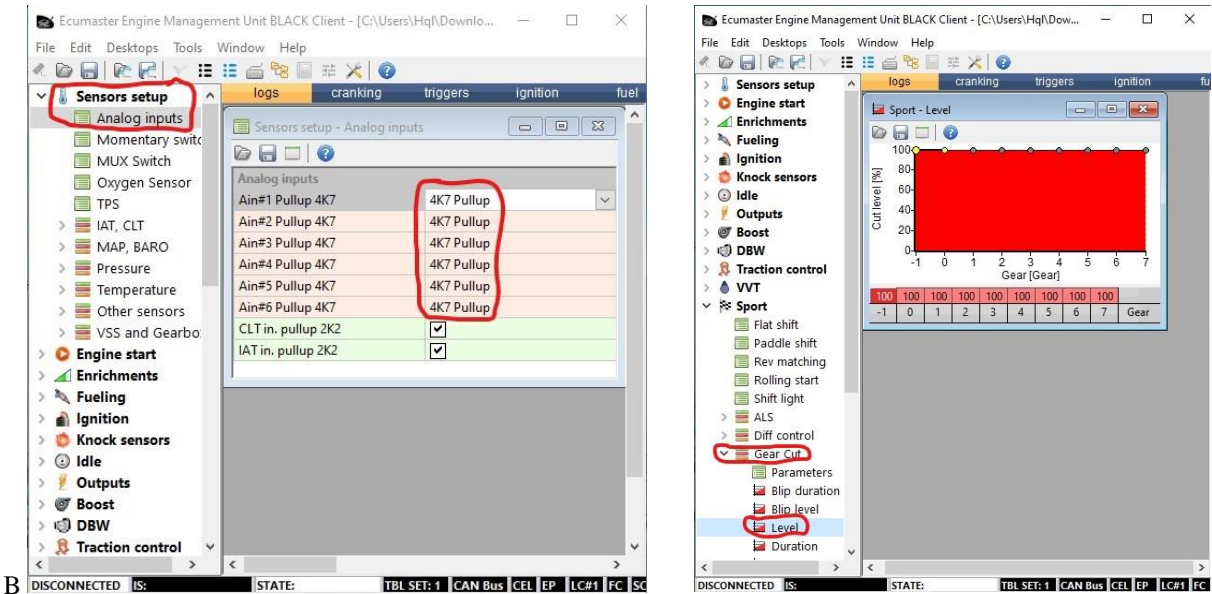
- Enable:**
- Signal source:** Analog in. (ext. controller)
- Signal input:** Analog input #5 (B35)
- Activation level:** Active low
- TPS Min:** 0 %
- RPM Min:** 600 rpm
- Min VSS:** 0 km/h
- Arm time:** 0 ms
- Cut delay:** 0 ms

The status bar at the bottom indicates the system is **DISCONNECTED** and shows various diagnostic parameters like TBL SET: 1, CAN Bus, CEL, EP, LC#1, FC, and SC.



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Interfacing Ecu Master EMU & Black to TTT802 Gearshift Controller



Wire connections.

Use extension cable (TTT Part # 12-650-6) to interface the Ecu Master EMU with the TTT802 cable harness (TTT Part # 12-630-8).

Red – Cut Open Collector – connects to one of the Ecu Master EMU Black Analog input Pin 31, 4, 17, 30, 35, 37.

Blue – Cut Gnd – connect to Ecu Master EMU Black ECU Sensor Ground Pin 29, 38, 39.

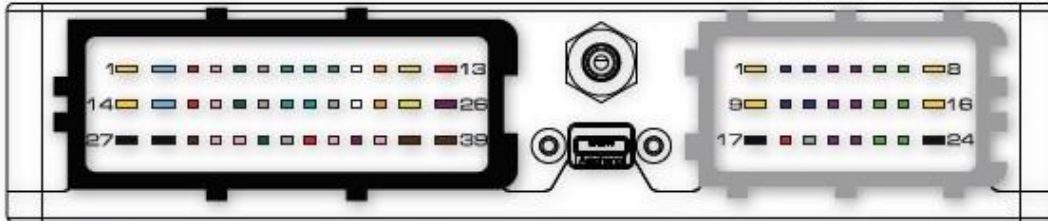
White – Ign pulse – connect to Ecu Master EMU Black Aux 4 / Tacho Pin 20

Black - Gnd Ign pulse – connect to Ecu Master EMU Black ECU Ground Pin 28.

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Interfacing Ecu Master EMU & Black to TTT802 Gearshift Controller

BLACK
ENGINE MANAGEMENT UNIT



| Black 39pin connector | | | |
|-----------------------|--------------------|----|---------------|
| 1 | Ignition coil #5 | 27 | Power Ground |
| 2 | EGT in #1 | 28 | Ecu Ground |
| 3 | Knock Sensor in #1 | 29 | Sensor Ground |
| 4 | Analog In #2 | 30 | Analog In #4 |
| 5 | CLT In | 31 | Analog In #1 |
| 6 | WBO Vs | 32 | IAT In |
| 7 | Camsync In #2 | 33 | WBO VGND |
| 8 | Primary trigger | 34 | +5V supply |
| 9 | Flex Fuel In | 35 | Analog In #5 |
| 10 | Switch #1 In | 36 | Switch #3 In |
| 11 | RS232 TXD | 37 | Analog In #6 |
| 12 | CAN H | 38 | Sensor Ground |
| 13 | Battery +12V | 39 | Sensor Ground |
| 14 | Ignition coil #4 | | |
| 15 | EGT in #2 | | |
| 16 | Knock Sensor in #2 | | |
| 17 | Analog In #3 | | |
| 18 | TPS In | | |
| 19 | WBO Ip | | |
| 20 | VSS In | | |
| 21 | Camsync In #1 | | |
| 22 | WBO Rcal | | |
| 23 | Switch #2 In | | |
| 24 | RS232 RXD | | |
| 25 | CAN L | | |
| 26 | +5V supply | | |

| Grey 24pin connector | | | |
|----------------------|-----------------------|----|---------------------|
| 1 | Ignition coil #6 | 17 | Power Ground |
| 2 | H-Bridge #1 Winding A | 18 | Ignition +12V |
| 3 | H-Bridge #2 Winding A | 19 | WBO Heater |
| 4 | AUX 6 | 20 | AUX 4 / Tacho |
| 5 | AUX 3 | 21 | AUX 1 / Injector #7 |
| 6 | Injector #4 | 22 | Injector #6 |
| 7 | Injector #1 | 23 | Injector #3 |
| 8 | Ignition coil #1 | 24 | Power Ground |
| 9 | Ignition coil #3 | | |
| 10 | H-Bridge #1 winding B | | |
| 11 | H-Bridge #2 winding B | | |
| 12 | AUX 5 | | |
| 13 | AUX 2 / Injector #8 | | |
| 14 | Injector #5 | | |
| 15 | Injector #2 | | |
| 16 | Ignition coil #2 | | |