

# Troubleshooting for T238 Light sensor version DTU for Gearbox V3

Fault	Fault Analysis	Solution
No reaction after connecting the battery	The connection of motor or battery is abnormal	Please use brushed 480 motor and battery which the voltage is higher than 7.4V , make sure battery and motor is functional, reconnect motor to make sure the circuit is closed then test the DTU with battery
Only pre-loading function works	1.The connection of motor is abnormal 2. Fault of motor	Please confirm motor and gearbox are functional, reconnect motor then test the DTU with battery
Magazine keeps feeding after it is attached	For DTU with pre-loading function , circuit for pre-loading function maybe overload For DTU without pre-loading function , negative of magazine could be connected improperly	1.Automatic pre-loading function is disabled, please return it to retailer for repair 2.For DTU without pre-loading function, the negative wire of magazine should be connected to negative of motor instead of negative of battery
Magazine cannot feed gel/BB	Fault of magazine Fault of gearbox Diameter of gel is improper Power supply wire of magazine anomaly	Please reconnect terminals for magazine, make sure the connection between magazine power supply and DTU is functional, then do troubleshooting for magazine/gearbox/ diameter of gel such external factors.
Only 2 long 'beep' after battery is connected , no reaction after the trigger is pulled	2 long 'beep' means DTU is entering programming model. It means trigger is pulled while selector plate is at 'auto' position. If trigger is not pulled , it means the trigger cannot block sensor while it is released , DTU detects that trigger is pulled.	Trigger is not fully released, it still block the sensor or the moving element of trigger unit is transmitting. Please make sure the moving element is opaque and modify the limit for trigger on the gearbox, extend both sides of the limit slot. Then place shim properly on the moving element of trigger unit according to the tutorial for preventing transmitting of light and blacken this moving element or change ut an opaque ones.
1 long 'beep' following by 3 short 'beep' after battery is connected , no reaction after	One long 'beep' following by 3 short 'beep' indicate that DTU is entering 'quick' model, it means trigger is pulled while selector plate is at 'semi' position. If trigger is not pulled , it means	Trigger is not fully released, it still block the sensor or the moving element of trigger unit is transmitting. Please make sure the moving element is opaque and modify the limit for trigger on the gearbox, extend both sides of the limit

the trigger is pulled	trigger cannot block sensor while it is released , DTU detects that trigger is pulled.	slot. Then place shim properly on the moving element of trigger unit according to the tutorial for preventing transmitting of light and blacken this moving element or change ut an opaque ones.
Only 3 short 'beep' after battery is connected, no reaction after trigger is pulled	3 short 'beep' means the DTU has Entered shooting mode successfully, it means initialization of DTU is successful. No reaction after the trigger is pulled might be caused by that trigger sensor is blocked by wires or other things or the travel of trigger is not enough to reach the trigger sensor or the trigger sensors on upper and lower circuit boards are broken.	Please investigate wires of gearbox then clean trigger sensors on both sides of circuit boards ; Since travel of trigger might not be enough , it is needed to modify the trigger limit of trigger on gearbox to make the trigger is able to reach the trigger sensor ; If it is impossible to observe the surface of trigger is normal or not. Please try to remove the trigger and assemble the upper circuit board and attach the motor then connect battery. If it is 2 long 'beep' or a long 'beep' following by 3 short 'beep', it means trigger sensor is functional. Otherwise, trigger sensor is down.
4 short 'beep'	4 short 'beep' is the warning for low voltage warning , it means battery is out or the setting for battery protection is wrong.	Fully charge battery , then set the first term to 5 before testing with battery
'semi' mode only	There is a 'beep' while changing mode. If there is no such 'beep', it means selector sensor which is at 'auto' position cannot detect white are on the selector plate. This means the position of stick on selector plate is not rear enough or the black on the sticker is too much or the surface of the white sticker is too far away from selector sensor.	The effective distance of selector trigger Is 0.5-2mm, make sure the sticker on the selector plate is in between this distance. Move the white area back properly until the position of 'semi' is accurate. ( For DTU in AK47 mode, it is needed to move the sticker forward )
'auto' mode only	There is a 'beep' while changing Mode. If there is not, it means DTU detects white area at 'semi' position, the black area of selector plate is not enough	The effective distance of selector trigger Is 0.5-2mm, make sure the sticker on the selector plate is in between this distance. Move the white area forward properly until the position of 'auto' is accurate. ( For DTU in AK47 mode, it is needed to move the sticker back )
Long 'Beep'	Long 'beep' is the alarm for motor	Please clean gear sensors and sticker of

after Motor rotates few rounds	<p>stall , DTU detect gears are not rotating, it could be:</p> <ol style="list-style-type: none"> <li>1. Motor does not drive gears rotating</li> <li>2. Gear sensor is dity</li> <li>3. Alignment of upper and lower circuit boards is incorrect</li> <li>4. Discharge of battery is not enough</li> </ol> <p>Gear sensor is down</p>	<p>gear, Change the battery to a battery with higher discharge rate (Higher than 1100mah 25C) and change the motor to a motor no-load current is lower than 3A then reassemble and test DTU</p>
Motor heating	<p>Frequent motor heating is mainly caused by high start and shut current and frequent shut. Active Brake of DTU needs to transfer the kinetic energy to heat energy for brake. It is related to the performance of motor; heating of motor is normal phenomenon and it is unavoidable.</p>	<p>Set the position of piston to 4 or higher in programming model can reduce or close active brake function to reduce motor heating. In addition, change the motor to high magnetic and low RPM ones can also reduce motor heating.</p>
Battery heating	<p>Critical battery heating is mainly caused by that the torque of motor is not enough for load or load is too large. Normally, it is because gears are too tight or the main spring is too strong; it could also be caused by discharge of battery is not enough or it is at overloading status for a long time</p>	<p>Battery with higher discharge rate and capacity is recommended. In addition, connector for battery, it is recommended to use XT30 or mini-Tamiya connector. Investigate the tightness of gears, the strength of main spring and smoothness of gearbox. Change the motor to a high-torque one can relieve this issue.</p>
Critical wire heating	<p>Critical heating of wire is because torque of motor is not enough for load or the load is too much (Gears are too tight or main spring is too strong); It could also be the discharge rate of battery is not enough or the battery is at overload situation for a long time</p>	<p>Battery with higher discharge rate and capacity is recommended. In addition, for connectors of battery, it is recommended to use XT30 or mini-Tamiya connector. Investigate the tightness of gears, the strength of main spring and smoothness of gearbox. Change the motor to a high-torque one can relieve this issue.</p>
Firing instantly after battery is connected	<p>FET chip has damaged</p>	<p>Please investigate battery connectors and motor connectors are reversal or not. Please check is there a short circuit or damage on wires or circuit boards, Please contact after-sales for solution</p>
DTU burn down instantly after battery is	<p>Battery is connected reversely</p>	<p>Please check the connector of battery is Reversal or not, Please contact after-sales for solution</p>

connected		
DTU burn down instantly after trigger is pulled	<p>Polarities of motor (Gearbox) are connected reversely</p> <p>Short circuit occurs on the wire that connects motor</p>	<p>Please check connector of motor is reversal or not, is there a short circuit or damage in wire. Please contact after sales for solution.</p>
Motor keeps working after trigger was released	<p>Trigger cannot block trigger sensor while it is released, the DTU detects that trigger is not released.</p>	<p>Trigger is not fully released, it still block the sensor or the moving element of trigger unit is transmitting. Please make sure the moving element is opaque and modify the limit for trigger on the gearbox, extend both sides of the limit slot. Then place shim properly on the moving element of trigger unit according to the tutorial for preventing transmitting of light and blacken this moving element or change ut an opaque ones.</p>