ThinkTank Tank Module PRO Flex Plus

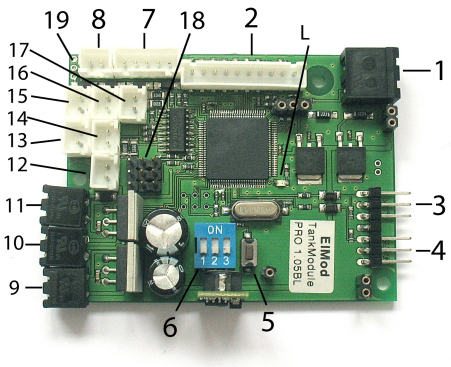
Instructions for Assembly and Handling

Please read this document carefully!

Product contents

- ThinkTank Tank Module PRO PCB
- ready to use power supply cable set
- three motor connectors
- proportional receiver cable set
- three cables for additional light

Overview



1 Power supply
2 Connector for proportional receiver
3 Connector for left chain motor driver
4 Connector for right chain motor driver
5 Setup mode push button
6 DIP-switches for selecting the tank profile
7 Connector for HengLong muzzle flash, AsiaTam recoil unit and PC Configurator
8 Connector for HengLong muzzle flash
9 Connector for turret motor, main gun elevation
10 Connector for turret motor, turret rotation
11 Connector for turret motor, shot & recoil
12 Main light
13 Muzzle flash LED for 2nd MG (also muzzle flash for 2nd barrel for twin barreled AA tanks)
14 Muzzle flash main MG
15 Auxiliary light
16 Brake light
17 Main gun muzzle flash LED (also muzzle flash for 1st barrel for AA tanks)
18 Servo motors connectors.
19 Connector for Tamiya recoil unit
L Status LED

Assembly

HINT: the function of all connectors is printed on the back side of the PCB!

Power supply

Solder the loose ends of the power supply cable to a battery connector that fits to your battery type. Use the included shrinking tube to insulate the soldered wires.

Warning! The use of the switch and fuse is mandatory! Fire hazard when disregarded!

Chain motors

Connect the ESC of your choice to the connector 3 and 4. The minus pole shows to the lower edge of the board.

To check the correct wiring of the motors perform the following procedure:

- Jack the tank up, so that the chains can move freely.
- Attach a full charged battery to the power supply connector and switch the electronics on.
- Wait 3 - 4 seconds and press the pushbutton.
- The chains start to move. The wiring is set up correctly if both chains move forwards and the light chain runs faster than the left one. In other case, correct the wiring by swapping the adequate cables.
- Go ahead with the installation when the motors run in described manner.

Turret elements

Connect all your turret elements to the corresponding connector.

- If using the genuine HengLong LED muzzle flash, attach it's cables (a 5-wire and a 2-wire cable) to the board.
- If using the genuine Tamiya recoil unit, attach it to the corresponding connector on the board. The white cable faces the edge of the board.
- The exact layout of the servo connectors is described on the bottom side of the PCB: upper row horizontal alignment, middle row vertical alignment, lower row main gun recoil.
- Additional light sources may be connected to the plugs 12 to 17. They provide about 50mA each and are designed to drive one to four LEDs.
- If any of the turret motors (connectors 9, 10 and 11) turns in the wrong direction, swap the wires of the motors.

Choosing the tank profile

The driving and function setup is determined by the position of the DIP switches. The Tank Module ECO offers seven fixed and one user defined profile

German, WW2, plastic gearboxes

German, WW2, metal gearboxes

German, WW2, 3:1 reducted gearbox

US, WW2, plastic gearboxes and PC Configurator

US, WW2, metal gearboxes

T-34

easy-to-drive tank

user defined setup used by the ThinkTank Configurator

Status LED

The onboard LED shows the current status of the module

on	Tank Module is in operational state	*no connection to the sender or the transmission path between sender and receiver is disturbed. Please check the wiring and the proper function of the RC radio and receiver. If necessary check the operability of the RC equipment with a servo. **undervoltage on the CPU detected. Switch the power off for 10 seconds. If the error remains, assure that the PC Configurator USB dongle is disconnected and retry.
Short going out	Stick movement detected	
Fast blinking	No valid signal from receiver*	
Slow blinking	Faulty communication with another module	
Double blinking	Faulty CPU power supply**	

RC receiver

This Tank Module may be connected with four to eight channel receiver. The currently active mode of operation is recognized automatically. Please consider that the radio must be setup correctly (all mixers must be deactivated, the servo deflection must be 100% and the trimming is centered)

If the channels five to eight are used, they must be equipped either as a slider, knob or 3-way-switch (up-off-down). Otherwise only four-channel operation is possible (although mostly all functions are also available with only four channels). The wires of unused channels may not be connected to the receiver.

The receiver cable has to be attached to the receiver connector on the Tank Module. The wire color pin assignment is as follows:

The Tank Module electronics provides the power supply for the receiver (BEC, stabilized 5V DC) via the red/black wires which are part of the proportional cable set.

Ch.	Control	4-channel mode	5-channel mode	6-channel mode
1	Right stick	Acceleration	Acceleration	Acceleration
2		Steering	Steering	Steering
3	Left stick	Turret, weapon and special functions	Turret and weapon control	Turret control
4				
5	Knob or slider	Not connected	Ignition and light	Ignition and light
6	Knob or slider	Not connected	Not connected	Weapon control

The channels 7 and 8 may be optionally used to control the user defined sounds of the sound module ThinkTank Blaster.

Ch.	Contol	Function
7	3-way-switch	User defined sounds: Sample 1 and 2
8	3-way-switch	User defined sounds: Sample 3 and 4

Depending on the receiver it may be necessary to adjust the channel order or swap its movement direction. Check the manual of your rc gear for details.

Turret, weapon and special functions using 4-channel mode

This mode is active if the blue wire of the receiver cable isn't attached to the receiver. The turret, weapon and special functions are controlled solely by the left stick of the radio.

Left stick (channels 3 and 4)	
↑ Lift the main gun (half deflection)	↑ Shot (maximum deflection)
↓ Lower the main gun (half deflection)	↓ Machine gun (maximum deflection)
→ Rotate turret right	↘ Auxiliary MG
← Rotate turret left	↙ Main light on/off
↖ Ignition (requires ThinkTank Blaster)	↗ Aux light on off

Turret, weapon and special functions using 5-channel mode

This mode is active if the blue wire of the receiver cable is attached to the receiver. The turret and weapon functions are controlled by the left stick of the radio, ignition and light is mapped to the 3-way switch connected to channel 5 of the radio.

Left stick (channels 3 and 4)		Switch (channel 5)
↑ Lift the main gun (half deflection) ↓ Lower the main gun (half deflection) → Rotate turret right ← Rotate turret left	↑ Shot (max. deflection) ↓ Machine gun (max. deflection)	↑ Ignition (requires ThinkTank Blaster) ↓ Main light on/off

Turret, weapon and special functions using 6-channel mode

This mode is active if the blue and violet wires of the receiver cable are attached to the receiver. The function mapping is as follows:

Left stick (channels 3 and 4)	Knob or slider (channel 5)	Knob or slider (channel 6)
↑ Lift the main gun (half deflection) ↓ Lower the main gun (half deflection) →Rotate turret right ←Rotate turret left	↑Ignition (requires TT Blaster) ↓Aux light (half deflection) ↓Main light (full deflection)	↑Shot ↓Aux. machine gun (half. deflection) ↓Main machine gun (max. deflection)

User defined sounds

If a ThinkTank Blaster is connected to this Thank Module, up to four user defined sounds may be activated optionally by the user. To use this feature, the gray and white wires of the receiver cable has to be attached to the 6th and 7th channel of the receiver .The samples are activated by switching the corresponding control in the radio to upper most (user sample 1 (ch.7) or 3 (ch8)) or lower most (user sample 2 (ch.7) or 4 (ch.8)) position. The playback may be aborted by moving the switch in the opposite direction.

Under voltage protection

The TankModule features an under voltage protection to protect the batteries from deep discharge. On delivery the threshold voltage is set to 6 volts for 7.2V NiMh/NiCd batteries. If the voltage drops below 6 volts, the tank stops and the main light starts to blink. In this case replace or recharge the battery.

Nicht geeignet für Kinder unter 14 Jahren.
Not suitable for Children under 14 years.
Ne convient pas pour des enfants de moins de 14 ans.
Niet geschikt voor kinderen onder de 14 jaar.

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