

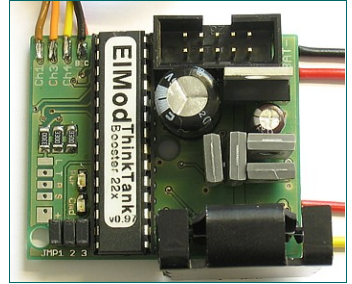
# WWW.XION.DE

## ThinkTank Booster22X

### Instructions for assembly and handling

Please read this document carefully!

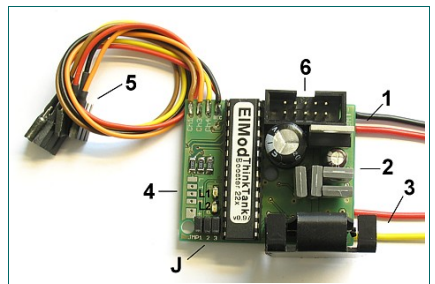
- Drive and function board for the SdKfz 222 or SdKfz 223
- Unique simulation of mass inertia:
  - true to original acceleration and braking behaviour
  - true to scale maximum speed
  - the acceleration decreases with increasing speed
  - full proportional braking
  - motor brake when releasing the lever
  - increasing brake power with increasing lever deflection
  - emergency stop when lever full deflected in opposite direction
  - short pause after direction change simulates the change of gear
- Optional disabling of mass inertia for simpler drive model by a jumper
- Optional connection of a turret motor
- Lightning true to original
  - front / rear light
  - Camouflage lighting (Notek/Kolonnenfahrgerät)
  - Brake light
  - Muzzle flash (MG on SdKfz 223, gun on SdKfz 222)
- EMNet-Interface for simple connection of a ThinkTank Blaster (sound module)
- Connection to a 2-channel (3-channel when using a turret motor) proportional receiver with BEC (a further channel is necessary for a steering servo)
- Overload protection for the drive engine (up to 5 A)
- Small dimensions (44mm x 37mm / 1,7" x 1,5")



### Connectors and control elements

For better orientation a shortcut is placed on the PCB close to every connector.

- 1 (Bat) Main battery (7.2 V, 6 cells)
  - 2 (Tr) Turret motor (bottom side of the PCB)
  - 3 (Mot) Drive motor
  - 4 Light connectors
    - (T) Carmouflage light - (L) Main light
    - (B) Brake light - (S) Muzzle flash
    - (+) common plus
  - 5 Receiver connectors
    - (BEC) red/black: power supply for the receiver
    - (Ch.1) brown: channel 1 – drive motor
    - (Ch.3) orange: channel 3 – turret motor (optional)
    - (Ch.4) yellow: channel 4 – functions (lightning, shot, ignition) <sup>1)</sup>
  - 6 EMNet-interface for further EIMod modules
- L1 Power LED - L2 Command LED - J1-J3 Jumper



	Jumper 1	Jumper 2	Jumper 3
<b>geschlossen</b>	SdKfz 223 (MG only)	Mass inertia simulation	No turret motor (3 channel mode)
<b>offen</b>	SdKfz 222 (MG and 2 cm)	Simplified drive mode	Turret motor installed (4 channel mode)

1) \* some functions are only available when ThinkTank Blaster is installed

## Assembly and connection

**Faulty wiring may cause premanent damage to the electronics! If anything is unclear, please contact us!**

- Connect the black wire of the power supply cable with the "-" lead of the battery and the red wire to "+" on the power switch.
- Connect the drive motor to the motor wires. If the vehicle drives in the wrong direction after the installation, swap the lines.
- If installed, solder the wires of the turret motor to the pads on the bottom side of the PCB.

**It is essential that ALL motors HAVE to be interference suppressed. See the according chapter for details.**

- Connect the receiver to the BEC and the receiver cables.
- Optionally, solder the vehicle lightning to the appropriate pads on the PCB. Up to four LEDs can be connected directly (parallely, without dropping resistor) on each pad. All anodes (plus leads of the diodes) have to be soldered to the common return pad. We recommend to use equal LEDs for each function (same type and same color. White LEDs can be colorized with a felt pen if necessary).
- Set the jumper to the appropriate configuration.
- Connect the second channel of the receiver to the steering servo.

**Shorten all cables as much as possible! The wires to the receiver and the antenna must be laid as faraway as possible from the motor and power supply lines.**

## Initiation

- Make sure that all connections are well fixed and that no conductive parts can touch each other.
- Connect a fresh battery and swich on the remote control and the vehicle exactly in this order.
- The power LED blinks 1-2 times and remains on.
- The ThinkTank Booster22X is operational now.
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## Operation state LEDs

<b>Power-LED</b>	on	Module is operational
	blinking	No valid signal from receiver*
<b>Command-LED</b>	on	Stick out of neutral position / valid command

\*A fast-blinking power LED means that there is no connection to the sender or that the transmission path between sender and receiver is disrupted. Please check the wiring and the operational state of the RC radio and receiver. If necessary check the operability of the RC equipment with a servo.

## Special functions

The fourth channel controls the following functions:

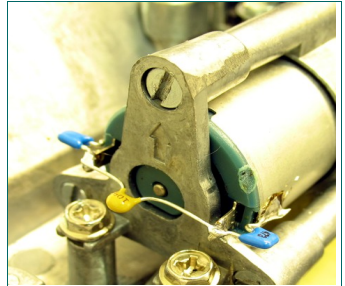
- full up: MG fire
- half up: main gun fire (only SdKfz 222)
- half down: Engine on/off (function requires a ThinkTank Blaster module)
- full down: light (main light - camouflage light - light off)

## Interference suppression

It is essential for reliable function and good operating range that all motors are suppressed correctly. For this purpose three condensators have to be soldered to the motor connections:

- a 47nF ceramic condensator to each connection and the case of the motor (blue parts on the picture).
- a 100nF ceramic condensator between the motor connections (yellow part on the picture).

The condensators must be attached as close to the soldering points as possible!



## Installation hints

For optimal function of the electronics, check the following points:

- Is the wiring OK?
- Are all batteries fully charged?
- Are all wires as short as possible?
- Are the motors correctly suppressed?
- Is the motor of an appropriate type? We recommend the Graupner Speed 280 (NO sport and NO race type!)
- It is recommended to isolate the body of the motor from the hull.
- Is the antenna laid correctly?
- Are the mechanics smooth running?
- Is a high quality and disturbance proved receiver installed?

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**Please visit our website [www.el-mod.de](http://www.el-mod.de)  
and take a look on the FAQ for in-depth informations.**

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**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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