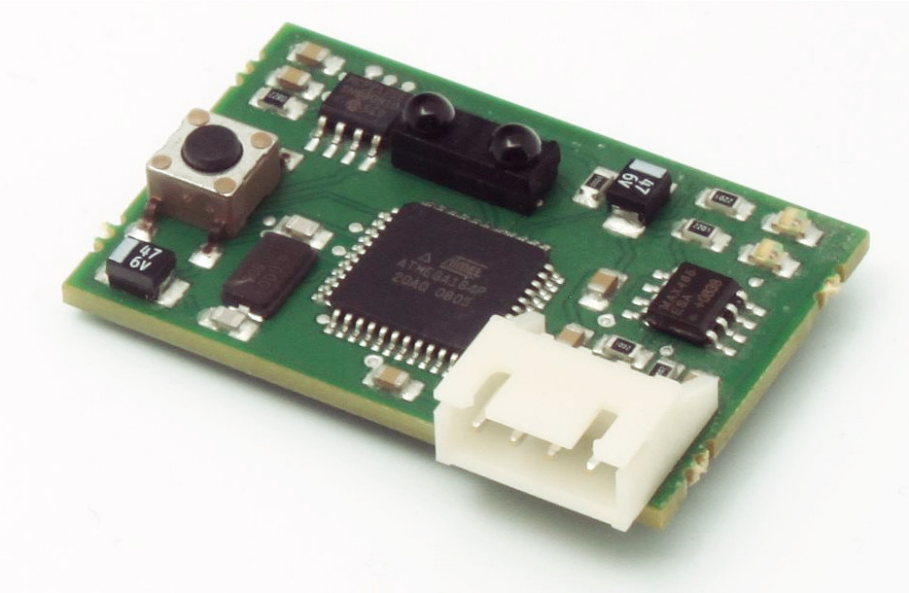
GFMC-SBR-10

Infrared Scalebusrepeater

With the help of two of these modules, a scalebus connection can be made via an infrared link. This makes it possible, for example, to connect an external esc in the undercarriage of an excavator with the FO module in the upper carriage. This makes endless rotation of the upper carriage possible, since the rotation is no longer limited by the cables winding up.



1 Note

Installation of the module requires intermediate to advanced modeling skills. Soldering skills are required to connect the wiring. Inexperienced modelers and persons aged under 16 years old should seek the assistance of an experienced modeler. Always switch off power when working on the wiring. Especial take care when connecting more than one receiver energy source. Prevent the device from getting wet. Check loads before connecting them to the modul at a current limited, or fuse protected source.

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2 Installation

2.1 Connection

The module must only be connected with the supplied Scalebus cable. The power supply of the module is done via this cable.

2.2 Mounting

The optical transmission element is soldered onto the circuit board. The optical axis is located in the center of the black component with the two lenses. (see figure 1)

The two scalebus transceivers must be aligned so that the lenses are opposite each other, i.e. the component sides of the boards are aligned with each other (see figure 2). In addition, the optical axes of both transceivers should be located in the axis of rotation of the turret/upper carriage as far as possible.

Deviations in the axis alignment are permissible, since the light propagates in a cone shape.

The illuminated circle has a diameter of about 50% of the distance. Since the transmitting and receiving LEDs are approx. 1cm apart, permissible deviations from the axis of rotation to the optical axis result according to the following table 1.

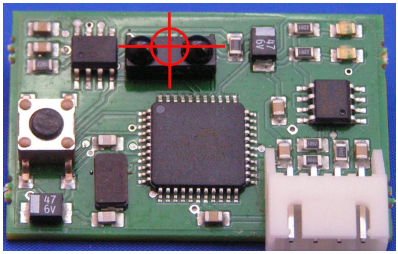

Figure 1: The optical axis is perpendicular to the board in the center of the red reticle

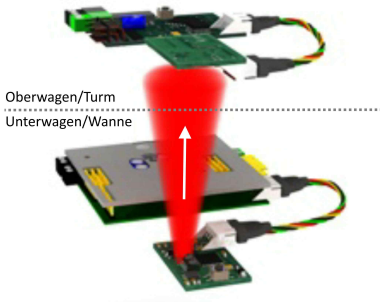

Figure 2: transmitting infrared light cone

Distance between the transceivers	Permissible deviation optical to the axis of rotation
2 cm (Mindestabstand)	0 cm
4 cm	1 cm
6 cm	2 cm
8 cm	3 cm
10 cm	4 cm

Table 1: distance / axis deviation table

The distance can be up to 80cm with free, direct view. When reflecting over a well reflective surface, up to 15cm can be achieved.

The easiest way to mount them is with a double-sided adhesive tape with foam insert.

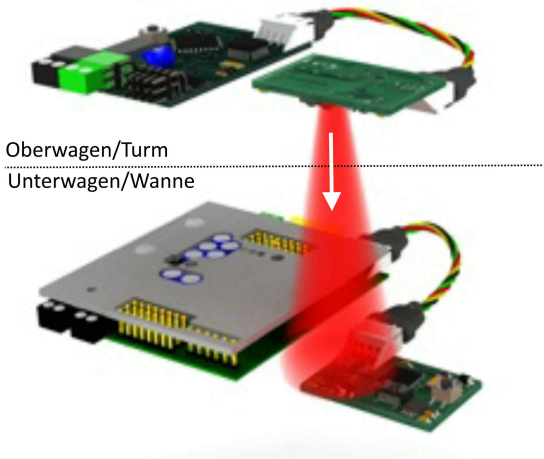

Figure 3: receiving infrared light cone

3 Commissioning

A commissioning is not necessary. You can recognize the activity of the module by the LED's on the board. red indicates transmitting and green receiving data. The button on the board has no function.

4 Technische Daten

current consumption	35mA
Supply voltage	4,75V bis 5,25V
dimensions	23x55x11mm
software version	00.01.18

5 Glossary of terms

BEC **B**attery **E**liminator **C**ircuit
This circuit replaces a extra Battery needed for the receiver and connected servos, by generating a fixed voltage from the drive battery.

ESC **E**lectronic **S**peed **C**ontroller
This is a unit to control the speed and direction of a DC motor.

LED **L**ight **E**mmitting **D**iode
A light-emitting diode (LED) is a semiconductor device that emits visible light when an electric current passes through it. Benefits of LEDs are low power requirement and long life. Disadvantages is the more complicated wiring, compared to a classic bulb, it has a polarity and a resistor is needed to limit the current.

Scalebus The Scalebus is a development of **SGS electronic** to connect controllers and modules to compose solutions for complex RC models.

SBus The Sbus has been introduced by **Futaba** to simplify the wiring between RC Receivers and servos / esc.

SBus The SBus was introduced by the company **Futaba** to simplify the wiring between receiver and servos/controllers. This is especially useful for models with many controllers.

IBus The IBus was introduced by the company **Flysky** to simplify the wiring between receiver and servos/controllers. This is especially useful for models with many controllers.

SUMD The SUMD sum signal has been introduced by the company **Graupner** to simplify the wiring between receiver and servos/controllers. This is especially useful for models with many controllers.

Abbre-vation	meaning	explanation
Stick	**S**tick	Stick not self centering
StickS	**S**tick **S**elfcentering	self centering Stick
TSMS	**T**hree **S**tage **M**omentary **S**witch	self centering momentary switch with three stages
TSS	**T**hree **S**tage **S**witch	switch with three stages
Pot	**Pot**entiometer	linear- or rotary knob
PotC	**Pot**entiometer with **C**enter key	linear- or rotary knob with a center key

Table 2: Abbrevation for the manipulators in the transmitter housing

6 Important

This equipment described above has been tested and inspected for quality and function. And it is intended for installation and use only as described above. This equipment does not contain any user serviceable parts. The supplier accepts no responsibility, financially or otherwise, for damages caused by use or misuse of the equipment described above. The equipment must be protected from exposure to water to prevent short circuit. Do not open the equipment or attempt to change function, wiring, or documentation in any way. Do not connect to incorrect voltage or reverse the battery polarity. Do not use in a careless or abusive fashion around persons or property. Do not attempt to repair. Any legitimate use, e.g. Installation in a model makes the user responsible to ensure that the operating instructions and non-liability agreement are provided to the purchaser of the module described above.

Do operate the device only in the permissible operating conditions. Do not make any changes to the controller through. The device shall not be exposed to splashing water or rain (causing a short circuit).

6.1 Warning

Due to choking hazard caused by small parts that may be swallowed, this product is not suitable for children under 6 years of age.

6.2 Environmental protection

For defective devices, repair is possible in many cases. Please contact us. If you do decide to dispose of the device, you will be making a contribution to environmental protection if you return the device to a municipal collection point for recycling. Electronic devices do not belong in household waste.

6.3 Address

SGS electronic
Zeppelinstraße 36
47638 Straelen
Germany / Europe

6.4 Contact

Web	www.sgs-electronic.de
Email	info@sgs-electronic.de

Ust-IdNr.:	DE 249033623
WEEE-Reg.-Nr.:	DE 90290947

6.5 Document date

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6.6 Documentation

We reserve the right to make updates, changes or additions to the information and data provided.

The documentation that accompanies your product applies.

Please note that documents obtained later via download may not correspond to the status of your module.