![Graupner HoTT logo - HOPPING.TELEMETRY.TRANSMISSION]

Manual

| 33505 | Receiver GR-12S HoTT |
| 33506 | Receiver GR-12 HoTT |
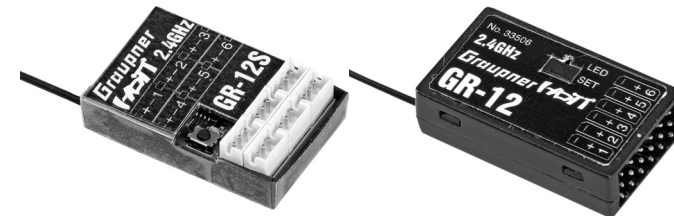
![Graupner HoTT logo]

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HoTT 1.0 / March 2011 - EN V1.2

CONTENTS:

Thank you for purchasing the Graupner HoTT 2.4 System Please read through this entire manual before you attempt the installation and usage of your Graupner HoTT 2.4 System!

These operating instructions are part of this product. They contains important notes to the operation and handling. Please take this into consideration when you pass on the product to third parties. Neglect of the operating instructions and the safety instructions lead to expiring the warranty.
Graupner constantly work on the advancement of all remote control systems; changes of the scope of delivery in form, technology and equipment we must reserve ourselves therefore. Please have understanding for the fact that from data and illustrations of this operating instructions no requirements can be derived.
Please keep these instructions for further reference!

1. GENERAL NOTE

When switching on or adjusting the radio control system it is essential to keep the transmitter aerial at least 15 cm away from the receiver aerials at all times. If the transmitter aerial is too close to the receiver aerials, the receiver will be overloaded, causing the green LED starts flashing. The transmitter responds by emitting a beep once every second; the red LED also goes out. The radio control system is now in Fail-Safe mode.
If this should occur, simply increase the distance between the aerials until the audible warning signal ceases, and the red LED on the transmitter lights up again; at the same time the green LED on the receiver should glow constantly.

2. FUNCTIONS

2.1. Binding

When you wish to use the Graupner HoTT 2.4 GHz receiver with a particular transmitter, the first step must always be to "bind" the unit to "its" Graupner HoTT 2.4 GHz RF module (transmitter). This "binding" procedure only needs to be carried out once for each combination of receiver and RF module. The units supplied in the set are already bound to each other at the factory, i.e. the binding procedure described in the following section only needs to be carried out when you wish to use an additional receiver. However, it can also be repeated at any time if required, e.g. after changing transmitters. When binding is required, this is the procedure:
• Switch the transmitter and receiver on.
• Locate the BIND / RANGE button on the back of the transmitter, and hold it pressed in while you press and hold the SET button on the receiver. Both LEDs on the back of the transmitter now glow constantly, and the green LED on the receiver flashes.
• If the green flashing LED on the receiver begins to glow permanently within about ten seconds, this indicates that the binding process is complete. You can now release both buttons, and your transmitter / receiver combination is ready for use.
• However, if the green LED on the receiver continues to flash for longer than ten seconds, then the binding process has failed. If this should occur, repeat the whole procedure.

2.2. Binding" multiple receivers in one model

If required, it is also possible to bind multiple receivers to the transmitter for a particular model. The first step is to bind each receiver individually using the procedure already described.
When the system is in use, the receiver which is switched on first is the Master receiver. Any telemetry sensors installed in the model must be connected to this unit, as only the Master receiver transmits sensor data using the downlink channel. The second and all further receivers operate in parallel with the Master receiver but in Slave mode, with the downlink channel switched off.
The control functions can also be distributed amongst multiple receivers; this is carried out using the Channel Mapping function of the SMART-BOX (Order No. 33700). In the same way it is possible to assign one control function to multiple receiver outputs; a typical example would be the use of two servos for each aileron instead of only one, etc.

2.3. Fail-Safe function

In its default state (as delivered) the receiver is set to "Hold" mode, i.e. if a fail-safe situation occurs, all the servos connected to it maintain the last position detected as valid. In this mode the green LED on the receiver starts flashing when interference occurs, and the red LED on the transmitter goes out. The transmitter also starts beeping about once per second as an audible warning.

You can exploit the safety potential of the fail-safe option by at least programming the throttle channel to respond to a fail-safe situation: the throttle channel of an engine-powered model should be set to idle, the throttle channel of an electric-powered model to "stop", and the throttle channel of a model helicopter to "Hold". If interference should occur, these settings will help prevent the model flying out of control, possibly causing personal injury or property damage.

Please refer to the appropriate section in your RC system instructions for the procedure.

3. RECEIVER

Telemetry socket (channel 5)
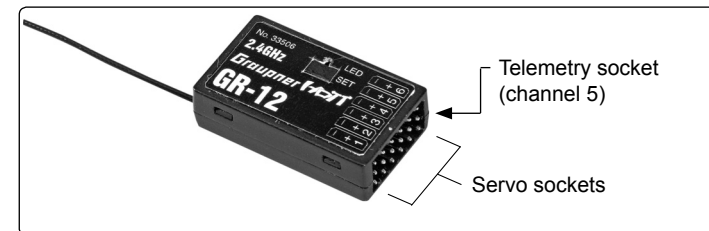
Servo sockets

3.1 Connections

Plug the servos into the row of sockets on the right-hand end of the receiver. The connector system is polarised; note the small chamfer on one edge. Never use force - the plugs should engage easily and fully. The socket polarity is also marked on the case: brown wire (-), red (+) and orange (signal).

The servo sockets of the Graupner-HoTT 2.4 receiver are numbered. The socket marked "- +/B" is intended for the battery. If necessary, a servo can be connected to this socket in parallel with the power supply; a Y-lead (Order No. 3936.11) is required for this.

t is also possible to program channel 6 for the sum signal using the SMART-BOX (Order No. 33700). This is important for certain optional devices which require this signal.

Power supply for receiver 33506

When using High Power servos, connect the receiver power supply/s preferably to the vertical ports of the receiver. If necessary, the servos can be connected to this sockets in parallel with the power supply; a Y-lead (Order No. 3936.11) is required for this.

When using a dual power supply, use the sockets on the outside:

Receiver 33506 (GR-12): Channel 1 and 6 (or 2 and 5)

Channel 1 and 6
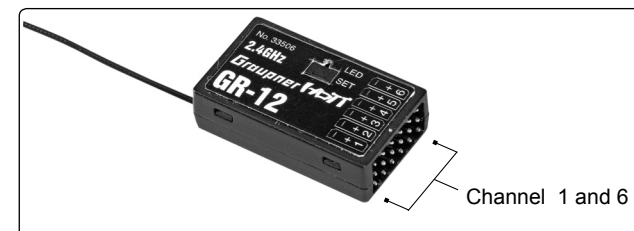
The socket marked "5" - channel 5 - is intended for the optional telemetry sensors and is used for loading firmware updates in conjunction with the USB interface. When using the receiver GR-12S (Order No. 33505) the adapter cable Order No. 23048 is also needed.

Note: with telemetry sensors connected to socket 5, servos will not longer work at this output!

3.2. Low voltage warning

If the receiver voltage falls below 3.8 V, the transmitter's RF module generates a low voltage warning in the form of a "general alarm sound": a steady beeping at intervals of about one second.

3.3. Temperature warning

If the receiver temperature falls below -10° C or exceeds +70° C, the transmitter's RF module generates a temperature warning in the form of a "general alarm sound": a steady beeping at intervals of about one second.

4. FIRMWARE UPDATE GRAUPNER-HOTT 2.4 RECEIVER 33505 / 33506

Firmware updates for the transmitter RF module or receiver can be transferred via the DATA or telemetry interface in conjunction with a PC running Windows XP, Vista or 7. For this you also require the USB interface, Order No. 7168.6, and the adapter lead, Order No. 7168.6A, which are available separately. When using the receiver GR-12S (Order No. 33505) the adapter cable Order No. 23048 is also needed.

The programs and files required for this are available from www.graupner.de in the Download area for the corresponding products.

Install the Firmware Update Utility Graupner and the USB drivers on your computer. Check the system requirements!
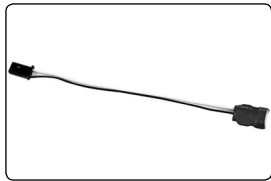
The first step is to cut through the central red wire in the adapter lead, Order No. 7168.6A, then connect the lead to the USB interface, Order No. 7168.6. This socket is also polarised; note the small chamfer on one edge. Never use force - the plug should engage easily and fully.

**4.1. Receiver**

Receiver GR-12 (Order No. 33506):

Connect the adapter lead to the socket Channel 5 of the receiver, as shown in the illustration. This socket is also polarised; note the small chamfer on one edge. Never use force - the plug should engage easily and fully.

The black wire (-) must be on top, the white wire (T) down.

Receiver GR-12S (Order-No. 33505): the adapter cable Order No. 23048 is also needed.

4.2. Update procedure

Ensure that the adapter lead is configured as shown in the illustrations, and is connected correctly to the transmitter or receiver.
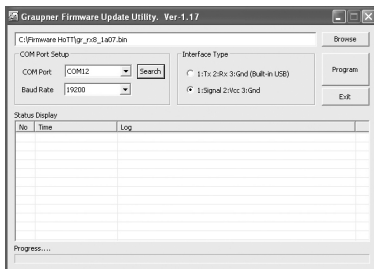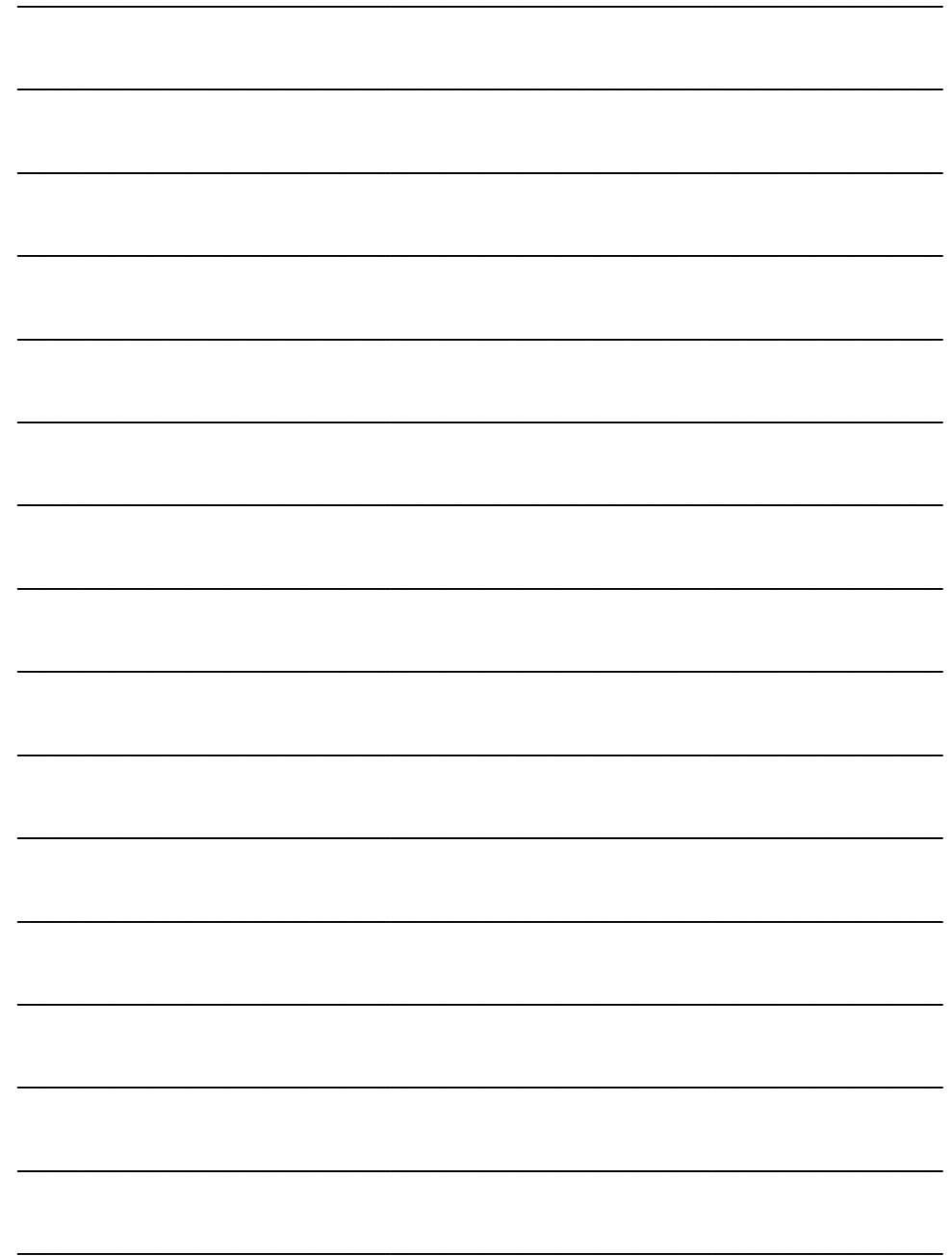
Start the Graupner Firmware Update Utility.

Under [COM Port Setup] select the correct COM port, i.e. the one to which the USB lead is connected. If you are not sure of this, press the button „Search" and select in the pop-up window „Silicon Labs CP210x USB to UART Bridge" and press „OK".

Baud Rate: 19200.

Under [Interface Type] click on Signal 2:Vcc3:Gnd.

Now click on the "Browse" button and select the folder containing the previously loaded firmware file ending in *.bin. If everything is correct, the file will appear in the corresponding window.

The firmware files are encoded in product-specific form, i.e. if you accidentally select a file which does not match the product (e.g. transmitter update file instead of receiver file), then the pop-up window "Product code error" will appear, and you will not be able to start the update procedure.

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warrantied for
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Monaten
months
mois

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Graupner-Zentralservice
Graupner GmbH & Co. KG
Henriettenstrasse 94-96
D-73230 Kirchheim / Teck

Servicehotline
☎ (+49) 01805 47 28 76
Montag - Freitag 7:30 -11:45
und 12:30 -16:00 Uhr

Belgie/Nederland
Jan van Mouwerik
Slot de Houvelaan 30
NL 3155 Maasland VT
☎ (+31)10 59 13 59 4

Luxembourg
Kit Flammang
129, route d'Arlon
L 8009 Strassen
☎ (+35) 23 12 23 2

Ceská Republika/Slovenská Republika
RC Service Z. Hnizdil
Letecka 666/22
CZ-16100 Praha 6 - Ruzyne
☎ (+42) 2 33 31 30 95

Schweiz
Graupner Service Schweiz
CD-Electronics GmbH
Kirchweg 18
CH-5614 Sarmenstorf
☎ (+41) 56 66 71 49 1

Espana
Anguera Hobbies
C/Terrassa 14
E 43206 Reus (Tarragona)
☎ (+34) 97 77 55 32 0

Sverige
Baltechno Electronics
P.O. Box 5307
S 40227 Göteborg
☎ (+46) 31 70 73 00 0

France
Graupner Service France
Gérard Altmayer
86, rue St. Antoine
F 57601 Forbach-Oeting
☎ (+33) 3 87 85 62 12

UK
Graupner Service UK
Brunel Drive
GB, NEWARK, Nottingham-shire
NG242EG
☎ (+44) 16 36 61 05 39

Italia
GiMax
Via Manzoni, no. 8
I 25064 Gussago
☎ (+39) 30 25 22 73 2

Garantie-Urkunde
Warranty certificate / Certificate de garantie

33505 Receiver GR-12S
33506 Receiverer GR-12

Übergabedatum
Date of purchase/delivery
Date de remise

Name des Käufers
Owner´s name
Nom de l`achateur

Straße, Wohnort
Complete adress
Domicie et rue

Firmenstempel und Unterschrift
des Einzelhändlers
Stamp and signature of dealer
Cachet de la firme et signature
du detailant

Press the "Program" button in the software. Wait briefly until you see movement in the progress bar. This make take up to five seconds, depending on the computer.
**Receiver**: press the SET button, and switch the receiver on while you hold it pressed in.
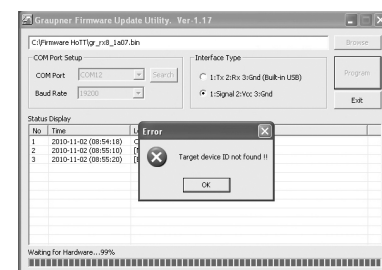
After a few seconds the Status screen displays the message "Found target device…"; you can now release the button, and the firmware update process commences.

If the device is not recognised, if the pop-up window "Target device ID not found" appears, or if the process fails before 100% is reached, you must restart the update procedure. Repeat all the steps as described above.

The Status display and the Progress bar show the progress of the firmware update. The update is completed when the message "Complete…100%" or "Complete!!" appears.
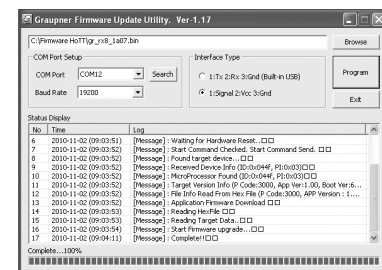
During the update process both LEDs on the transmitter glow constantly. When it is complete, the red LED goes out and you will hear a brief confirmation melody. The green LED on the receiver also light up; when the process is complete, the green LED starts flashing.

Switch your transmitter / receiver off, and disconnect the adapter lead.

Caution: after completing an update process, you must initialise the device before using it, i.e. reset it to the factory default values.

Initialisation:
Transmitter: To initialise the system, i.e. to reset it to the factory default settings, locate the BIND / RANGE button on the back of the transmitter, hold it pressed in while you switch the transmitter on, then release the BIND / RANGE button again.
Receiver: Press and hold the SET button on the receiver, switch it on, and release the SET button again. After about two or three seconds the green LED on the receiver lights up to confirm that your radio control system has been re-initialised.
Please note:
The initialisation procedure erases ALL the settings you have entered. Where necessary, you will need to program your preferred settings again.

When initialisation is complete, the transmitter will be in Fail-Safe set-up mode. You can therefore immediately continue by programming your fail-safe settings.
If you previously set your transmitter's Country setting to "France" mode, you must also re-enter the Country setting.
Please refer to the appropriate section in your RC system instructions for the procedure.

Any settings you have entered using the SMART-BOX are also lost when you initialise the receiver. If you carry out a receiver firmware update, you will need to re-enter these settings.

The latest version of these instructions can be found at www.graupner.de

**Konformitätserklärung gemäß dem Gesetz über Funkanlagen und
Telekomunikationsendeinrichtungen (FTEG) und der Richtlinie 1999/5/EG (R&TTE)**
Declaration of Conformity in accordance with the Radio and Telecomunikations Terminal Equipment
Act (FTEG) and Directive 1999/5/EG (R&TTE)

Graupner GmbH & Co. KG
Henriettenstraße 94-96
D-73230 Kirchheim/Teck

erklärt, dass das Produkt: **mx-12 HoTT - No. 4754, mx-16 HoTT - No. 4755,**
declares that the product   **GR-12S HoTT - No. 33505, GR-12 HoTT - No. 33506,**
    GR-16 HoTT - No. 33508, GR-24 HoTT - No. 33512,
    GR-32 HoTT - No. 33516

Geräteklasse: **2**
Equipment class

den grundlegenden Anforderungen des § 3 und den übrigen einschlägigen Bestimmungen des
FTEG (Artikel 3 der R&TTE) entspricht.
complies with the essential requirements of § 3 and the other relevant provisions of the FTEG (Article 3 of the
R&TTE Directive).

Angewendete harmonisierte Normen:
Harmonised standards applied

EN 60950:2006   Gesundheit und Sicherheit gemäß § 3 (1) 1. (Artikel 3 (1)a))
    Health and safety requirements pursuant to § 3 (1) 1. (Article 3 (1) a))

EN 301 489-1 V1.7.1   Schutzanforderungen in Bezug auf elektromagnetische
EN 301 489-3 V1.4.1   Verträglichkeit § 3 (1) 2, Artikel 3 (1) b))
    Protection requirement concernig electromagnetic compatibility
    § 3 (1) 2, Artikel 3 (1) b))

EN 300 328   V1.7.1   Maßnahmen zur effizienten Nutzung des Frequenzspektrums
    § 3 (2) (Artikel 3 (2))
    Measures for the efficient use of the radio frequency spectrum
    § 3 (2) (Article 3 (2))

CE ①

Kirchheim, 08. Dezember 2010   Stefan Graupner, Geschäftsführer
    Stefan Graupner, Managing Director

Graupner GmbH & Co. KG Henriettenstraße 94-96 D-73230 Kirchheim/Teck Germany
Tel: 07021/722-0   Fax: 07021/722-188   EMail: info@graupner.de

ENVIRONNEMENTAL PROTECTION NOTES

When this product comes to the end of its useful life, you must not dispose of it in the ordinary domestic waste. The correct method of disposal is to take it to your local collection point for recycling electrical and electronic equipment. The symbol shown here, which may be found on the product itself, in the operating instructions or on the packaging, indicates that this is the case.

Individual markings indicate which materials can be recycled and re-used. You can make an important contribution to the protection of our common environment by re-using the product, recycling the basic materials or recycling redundant equipment in other ways.

Remove batteries from your device and dispose of them at your local collection point for batteries.

In case of R/C models, you have to remove electronic parts like servos, receiver, or speed controller from the product in question, and these parts must be disposed of with a corresponding collection point for electrical scrap.

If you don't know the location of your nearest disposal centre, please enquire at your local council office.