

duplexX

ENGLISH

2.4EX
extended serie

radio control system

DUPLEX Tx transmitter modules (along with **DUPLEX Rx** receivers) constitute the base of a complex system working in the **2.4GHz** band, assigned to remote control of models. These modules may be installed into transmitters which in a convenient way transmit stick and control element positions. Recently most of available transmitters working with PPM mode are suitable for this purpose.

The **DUPLEX EX** transmitter modules and receivers take advantage of modern hightech technologies and offer thanks to precise production and test methods maximum safety and reliability.

The **DUPLEX EX** is the successor of the recent **DUPLEX system**, but it comprises full compatibility with it. On the other hand the series EX extends its capabilities especially in the field of telemetric data transfer and offers thus an even better insight into the state of the model. Full utilization of the new properties is supported by the **JETIBOX PROFI** terminal, which offers improved imaging possibilities and user comfort. In connection with the program package **FlightMonitor** it facilitates parameter setups of particular system components, enables data processing and monitoring of telemetric data during flight and delivers tools for exact after flight analysis of data collected during flight. This way it implements a new dimension into the management and utilization of the whole system.

TX Modules of the DUPLEX system are offered as plug-in replacement modules DUPLEX TF and DUPLEX TG, as well as internal assembly modules DUPLEX TA and DUPLEX TU2.

Basic data	DUPLEX TU2	DUPLEX TF	DUPLEX TG2/TGi/TGi2/TGs	DUPLEX TMe	DUPLEX Tmp	DUPLEX TA
Dimensions [mm]	55x26x11	59x37x20	60x44x21	64x28x11	43x22x16	52x33x18
Weight [g]	15	40	50	17	20	10
Antenna [dBi]	2	2	2	2	2	2
Acoustic signalling of conditions	•	•	•	•	•	•
Number of input PPM channels	16	16	16	16	16	9
Operation temperature [°C]	-10 to +85	-10 to +85	-10 to +85	-10 to +85	-10 to +85	-10 to +85
Supply voltage [V]	3,5 – 16	3,5 – 16	3,5 – 16	3,5 – 16	3,5 – 16	3,5 – 16
Average current [mA]	38	38	38	38	38	38
Output power [dBm]	20	20	20	20	20	20

Installation of DUPLEX TF and DUPLEX TG Modules:

DUPLEX TF and **TG** modules are assigned to transmitters with exchangeable HF plug-in modules.

TF modules are compatible to corresponding exchangeable modules of **Futaba** and **Hitec** transmitters.

TG modules are assigned to **Graupner** and **JR transmitters**. Factual assignments see Table 2 at the end of the instructions.

Remove the original HF module of your transmitter and plug-in with the correct orientation of the connector the DUPLEX TF or TG in place of the original module. Screw the Tx-antenna delivered with the Tx module into the module box.

Installation of the DUPLEX TU Module:

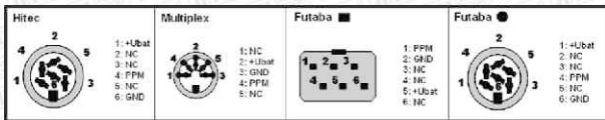
Place of destination of the DUPLEX TU2 transmitter modules are transmitters working in PPM mode, but without having exchangeable HF module.

In this case connection of the module to the transmitter affords certain skill and experience with electronic equipment. The skill necessary depends upon the type of transmitter and upon the manner you intend to connect it up. On PPM transmitters with a „trainer“ connector the transmitter module can be connected to this connector. Other transmitters require removal of the Tx back cover in order to assemble the module DUPLEX TU2 directly inside the transmitter. For this kind of work we recommend to take advantage of the help of a service station. An acute list of appropriate centers you may find on the home page of www.jetimodel.com.

Installation with the Aid of the Trainer Connector:

Find the connections of the trainer connector in the instruction manual of your transmitter, connections of several transmitters are shown below. In order to insure correct operation of the DUPLEX TU2 module you have to interconnect

the corresponding pins GND, supply +Ubat and the PPM signal between the transmitter and the IN connector of the module. Mechanically you may fix the module and the connector either to the transmitter case or the transmitter tray.

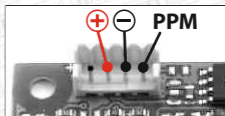


Internal Installation:

Switch off the transmitter and place it on a soft pad in order to prevent mechanical damage. Remove the cover and before proceeding remove batteries. Select an appropriate location in your transmitter for assembly, keeping placement of the antenna connector in mind. Mechanical fixing of the module you may accomplish by means of double sided tape, Velcro fastener or by small screws through holes provided in the module.

For installation of the antenna connector you may usually take advantage of one of the holes provided for additional switches, the hole for the existing antenna 35/40 MHz, or you may drill a 6,5 mm dia. hole at an appropriate location. In any case, the part of the connector protruding through the transmitter wall should be long enough (after screwing the antenna in there must remain at least a small gap between transmitter case and antenna).

On the DUPLEX TU2 module there is a 4-pin connector which connects the voltage supply and the PPM signal of the transmitter encoder to the module (see Fig.).



Installation of the TU2 module:

1. Installation of one transmitter module Duplex 2,4GHz.

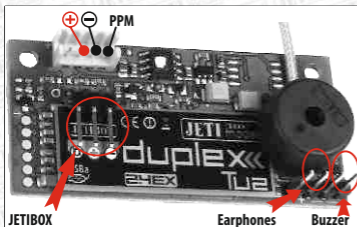
As far as transmitters of the Graupner MC line are concerned disconnect and remove the FM module and connect the TU2 module directly to the transmitter encoder by means of the original cable. Some Graupner MC transmitters as well as other transmitter types are not equipped with standard connectors. In that case you will have to apply the cable which is contained in Duplex TU2 package or use a special cable as provided in the assembly kit of your actual transmitter.

2. Installation of two transmitter modules Duplex 2,4GHz with the aid of the assembly kit SWTU-2.

In order to achieve a maximum increase of remote control system reliability you may take advantage of two Duplex transmitter modules in line with two receivers. For this purpose you need the cable contained in the assembly kit SWTU-2 which fits transmitters with standard connectors (for instance the Graupner MC line). This cable is also applicable to other transmitters but it has to be adapted to the actual transmitter configuration or omitted altogether.

Connection of the external buzzer and earphones:

An earphone or an additional external buzzer may be connected to the module TU2. Connection to the module TU2 is carried out by means of the gold plated pins as shown in the picture (polarity is of no significance). The module TU2 is able to recognize the connection of earphones and automatically disables the buzzer for generation of telemetric alerts. Alerts concerning loss of range, low receiver are generated into earphones as well as into the buzzer.



Assembly kit: Voice-1

1. Jack 3,5mm - Earphone connecting accessory
2. Ext. buzzer - accessory

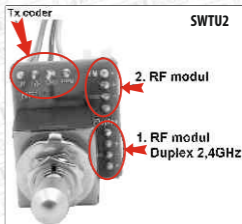
Installation of the DUPLEX TA Module

The DUPLEX TA module is designed for installation into the Aurora 9 transmitter. The TA module is delivered without antenna and case. For this purpose take advantage of the original antenna and case of the Hitec module which have been delivered with the transmitter.

Assembly of the DUPLEX TA Module:

During installation of the module be sure that the transmitter is switched off!

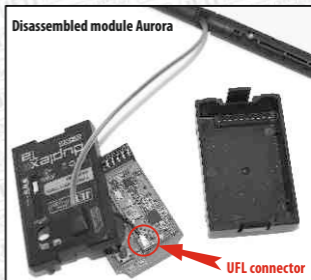
1. From the back of the transmitter carefully remove the original transmitter module and simultaneously loosen by slightly turning the transmitter antenna, which is connected by a cable to the transmitter module. Instructions for the removal of the antenna and module you may find in the manual of the appropriate transmitter module.
2. Disassemble the original transmitter module case, held together by sidewise positioned screws, by unscrewing and removing these screws.



3. After removal of the case disconnect the antenna cable from the connector of the original module
4. Open up the hole for the originally used push button in the case to 6 mm dia.
5. Connect the antenna cable to the TA transmitter module connector and put everything back into the case.
6. Close the case again by means of the two screws, shift the antenna in place and plug-in the module back into the transmitter.
7. Place a new sticker DUPLEX EX, as delivered with the TA module, over the original module sticker.

Now the module must be paired with the receiver, see

below. Be careful when switching on the transmitter Aurora 9, the module is not switched on as long as the transmitter is not in transmitting mode. You will recognize the switch-on state of the module when the red LED starts blinking. The blinking red LED on the module indicates communication between module and transmitter. At the transmitter working in Duplex mode moreover a green LED will turn on.



ELECTROSTATIC SENSITIVE DEVICE OBSERVE HANDLING PRECAUTIONS



Putting into operation

Pairing with the receiver and performance verification

Any receiver and transmitter module takes advantage of digital transfer for communication purposes, in order to enable direct address communication between the equipment it is necessary to apply the so called pairing between them. The description of a transmitter module is given by its unique address which after pairing to the receiver ensures, that the receiver will accept only data from this definite transmitter. There may be paired as many receivers as you like with the transmitter module, but a receiver can be paired to one transmitter only.

Install the receiver into your model. If the equipment is switched on first time we explicitly recommend to ensure that no detrimental effects on health or property may occur due to unexpected receiver output conditions (for instance badly adjusted mixers, reversed outputs etc.).

Activate receiver pairing by means of the shorting plug (**BIND PLUG**), which is a part of the receiver.

Plug-in the shorting plug into the connector "Ext." and switch on the receiver. Then switch on the transmitter. If pairing was successful the transmitter will confirm this by a short beep (by a lower and then a higher tone). If no confirmation of a successful pairing occurs, try to repeat the whole procedure or try to verify via the JETIBOX whether the receiver is in „Normal Mode“ (a receiver in „Clone Mode“ is not allowed to transmit and hence cannot confirm pairing). After pairing confirmation remove the BIND PLUG from the receiver connector.

Verify correct reactions of the model to transmitter commands (servo deflections have to follow corresponding stick deflections). If not, check whether servos are plugged into correct positions and the receiver is correctly adjusted (adjustment of mixers etc.). DUPLEX receivers can be reset to original state by the JETIBOX (connected to the receiver) with the help of the menu Autoset-normal.

DUPLEX Tx modules are adapted to cooperate with transmitters working with PPM signals. If the transmitter is switched to PCM mode or the installation has not been performed properly, the transmitter module will emit a repeated alert tone (3x long beep).

Range test

Before initial utilization of the transmitter (or receiver) it is advisable to make a range test and thus verify correct functions of the transmitter and receiver HF circuits. The transmitter can be switched to the test mode by the JETIBOX or by the BIND PLUG.

After connection of the JETIBOX to the transmitter select the item "Range Test" and push the button U (upward arrow). The transmitter will be switched to range test mode and the transmitted power will be decreased to less than 10%. This situation is reported acoustically by interrupted beeps (short and long tone). After pushing the button U again (upward arrow) the transmitter returns to normal state, the output power increases to the normal value and beeping ceases. Test mode activation by means of the BIND PLUG commences analogical to receiver pairing as shown above. However, after the pairing procedure keep the shorting plug plugged in the receiver. As long as the shorting plug remains plugged in, the transmitter will stay in range test mode. In this mode the transmitter behaves in the same way as if range test would have been activated by the JETIBOX. In order to stop this mode remove the shorting plug from the receiver.

Place the model and transmitter at least 80 cm high above ground. A correctly working transmitter and receiver in test mode should have a range of at least 50 m. If not, first of all verify correct antenna installation (transmitter and receiver). If the test still shows no success, do not use the equipment and contact your dealer or a service center.

Automatic Test

The TX module comprises an automatic test system as well. After switching on the receiver and transmitter a quality evaluation of the transmission path including all antennas is being performed. The result is reported 1 second after switching on of the transmitter by an acoustic signal of the TX module. No signal at all after lapse of this period signifies a flawless transmission path. An impaired transmission quality is indicated by one to four tones of the TX module. One single tone can already occur if the model is slightly further away of the transmitter, but the transmission path is OK. If more tones are released check the TX antenna connection as well as positions of the RX antennas and make a range check.

Connection of the JETIBOX

As already mentioned the JETIBOX terminal can be connected to DUPLEX Tx transmitters. With the help of this terminal transmitter data and parameters as well as currently connected equipment (receivers, telemetric sensors etc.) may be displayed and adjusted.

DUPLEX transmitter modules are equipped with a three pin connector (see marking) intended for connection of the JETIBOX. Connection can be easily done by the interconnection cable delivered with the JETIBOX. When connecting pay attention to correct orientation of the connectors. We recommend to connect or disconnect the JETIBOX only, if the transmitter is switched off. When the transmitter has been switched on you will be able to skim through items of the transmitter or other connected equipment with the help of the JETIBOX push buttons.

Parameter Adjustment with Help of the JETIBOX

When connecting the JETIBOX terminal to the transmitter you may select whether you want to display and adjust transmitter parameters (Tx), connected receivers (Rx) or other equipment (Mx) which is able to communicate with the JETIBOX. Communication with Rx and Mx is only possible if the transmitter module and receiver are paired and if there exists a radio link. This situation is shown in the LCD display by a downward showing arrow beside the Mx and Rx text.

After adjustment of the claimed item (Tx/Rx/Mx) push the button D (downward arrow). Afterwards you may skim with help of pushbuttons through the menu of the selected equipment. When working with equipment Rx or Mx you may get back to the transmitter module menu Tx by holding down button U (arrow upward) for a time longer than 2 seconds.

When scrolling positions Tx/Rx/Mx with the button R (arrow right) basic telemetric data can be shown. In the first line of the JETIBOX display you will see the RX antenna voltage as well as the receiver supply voltage. The second line shows values of the telemetry sensor, which is connected to the receiver input Ext. These Data are copied from the second line of the actual data display of the connected sensor or from the Expander. If there is no gadget connected to the receiver input Ext., the second line of this menu position will show now data.

Summary of Transmitter Items:

The introductory display shows the transmitter type. By pushing button R (right arrow) the identification numbers of the transmitter module and of the actual paired receiver are displayed.

FW ver. 3.00 – Firmware-Version of the transmitter module. New versions are available on the internet pages of www.jetimodel.com.

Diag – shows more detailed informations about the transmitter and paired receiver condition.

Identification of the active receiver antenna (**A1/A2**) and of the actual signal intensity rated from 0 to 9 (best).

On the right side according to condition the following indicators may be shown:

R - Range Test mode (range test)

- P** - after switching on the transmitter has not yet been paired (did for the moment not yet find a paired receiver)
- S** - there are no receiver data available (bad signal)
- T** - low voltage of the transmitter battery
- B** - low voltage of the receiver battery
- I** - there are no PPM pulses from the transmitter accessible (installation error, PCM mode etc.)

Most of the conditions shown are accompanied by acoustic signals.
By pushing button U (upward arrow) range test mode may be activated.

ImpDiag – shows the actual number of transmitter PPM channels (K2 till K16, depends on transmitter type).

Volt MIN/ACT/MAX - minimum, actual and maximum value of transmitter module supply voltage. Reset („zeroing“) of the min. and max. values is always executed when the transmitter is switched on and after location of the paired receiver. Alternatively the displayed values may be reset by simultaneously pushing buttons L and R (left and right arrow).

Rx Signal Level – shows the actual signal intensities of individual RX antennas. The intensity is shown in steps from 0 till 9 and the highest rating of 9 indicates the best reception of a particular antenna. A dash (-) indicates that the TX module is not receiving any informations about the reception quality of the particular antenna. Either the receiver is not connected or backward transmission from the receiver to the transmitter is at the range limit.

Volt ACT/ALARM – shows the actual value of transmitter module supply voltage and the adjusted limit for an alert signal "T" (see menu Diag). By buttons L and R (JETIBOX buttons -left or right) the alert start limit may be adjusted.

Alarm Level – setting of the level, at which the transmitter module will start signalling low reception level of receiver antennas. The lower line shows the actual level of the individual receiver antennas. If the reception with the better signal level will fall below the set level, an acoustic sound will point out to this fact (2x short high-pitched tones). See: RX Signal Level.

Input Mode – setting of the type of transmitter PPM input pulses. Most transmitters are using standard PPM signals. You should choose PPM v2 or v3 only, if your transmitters allows switching to a different PPM mode. In most cases this is related to transmitters with the ability of trasmitting more than 8 channels in PPM mode, as for instance 12 channel Transmitters.

Alarm Error PPM – permission / prohibition of acoustic signalling of an unconnected or erroneous transmitter PPM signal. Switching-off this type of signals is only recommended, if the module is used for telemetric purposes only and is not connected to a transmitter used for model control.

Mx Tone 1 - enables adjustment of warning tone frequency (Hz), which reveals alert conditions of the connected equipment Mx (usually a telemetric sensor). A value of 0 indicates that the warning tone is switched off.

Mx Tone 2 - enables adjustment of information tone frequency (Hz), which informs about the alert condition of the connected equipment Mx. This tone has Morse alphabet character and follows immediately after the warning tone. A value of 0 indicates that the information tone is switched off.

RF Output Power - allows setting an output power of Tx module. (Maximal output power can differ in different countries, according to local rules)

- transmitting in 2.4 GHz band with max. power 10mW
- transmitting in 2.4 GHz band with max. power 100mW (recommended setting)
- transmitting in 2.4 GHz band operates in combination of 10mW and 100mW max. power

Acoustical Condition Signalling

All types of transmitter modules are equipped with an acoustic output which is utilized for signalling of different transmitter, receiver or attached telemetric sensor conditions. The following conditions are reported by acoustic signals:

I (___)	3x long low tone PPM pulses of the transmitter are not accessible (installation error, PCM mode etc.)
P (-)	short low tone and consecutive high tone - a paired receiver has been found
B (-)	long high beep low receiver battery supply voltage
T (*)	short high beep low transmitter battery supply voltage
S (**)	2x short high beep there are no receiver data available (bad signal)
R (-.-)	alternating short and long tones Range Test mode (range test)
M	alert indication from attached telemetric sensor first beep (revelation tone) corresponding to adjusted value Mx Tone 1 consecutively a Morse alphabet beep (information tone due to adjustment Mx Tone 2)

Alert indication by Morse alphabet signal, character of signal is given by the type and adjustment of attached equipment (receiver, telemetric sensor etc.).

For Tx modules we grant a warranty of 24 months from the day of purchase under the assumption that they have been operated in conformity with these instructions at recommended voltages and that they were not damaged mechanically. Warranty and post warranty service is provided by the manufacturer.

We wish you successful flying with the products of : **JETI models s.r.o. Pribor, www.jetimodel.com**

Tab. 2 - Assignment of Modules and Transmitters / Senderzuordnung zu den einzelnen Modultypen

Transmitter / Module	TU2	TF	TG2 TG2	TGi	TGs	TMe	Imp	TA
Futaba: 7U, 8U, 8J, 9C,9Z, FN, T10C, 3PK, 3PJ, F-16, FC-18+, FC-28	•	•	-	-	-	-	-	-
Futaba: FC-16, FC-18 JUNIOR, T6EXHP, T6EXA, 12FG, 12Z, FX-14, FX-18, FX-30, FX-40, F-14	•	-	-	-	-	-	-	-
Hitec: Optic 6, Eclipse 7, Prism 7, Aggressor CRX/SRX	•	•	-	-	-	-	-	-
Hitec: Laser 4, Laser 6, Flash 5, Optic 6 sport	•	-	-	-	-	-	-	-
Graupner/JR: X-347, X-388, X-9303, MX-22, X-3810 ADT, PCM-10S, PCM-10X	•	-	•	-	-	-	-	-
Graupner/JR: FM-6014, MC-17, MC-18, MC-20, MC-24	•	-	-	•	-	-	-	-
Graupner: MC-10, MC-12, MC-14, MC-15, MC-16, MC-19, MC-22, MC-16/20, MX-12, MX-16s	•	-	-	-	-	-	-	-
Graupner/JR: MX-24s	•	-	-	-	•	-	-	-
Multiplex: EVO 7,9,12	•	-	-	-	-	•	-	-
Multiplex: Profi 3000, 4000	•	-	-	-	-	-	•	-
Multiplex: Cockpit SX	•	-	-	-	-	-	-	-
Hitec: Aurora 9	-	-	-	-	-	-	-	•
Other Transmitters / Andere Sender	•	-	-	-	-	-	-	-

Series **DUPLEX EX** receivers are designated to operate with series **DUPLEX** and **DUPLEX EX** transmitter modules in the 2.4GHz band. Thanks to the full digital and bidirectional communication between transmitter and receiver they offer new chances in the field of remote controlled models.

The **DUPLEX EX** transmitter modules and receivers take advantage of modern hightech technologies and offer thanks to precise production and test methods maximum safety and reliability.

The **DUPLEX EX** is the successor of the recent **DUPLEX system**, but it comprises full compatibility with it. On the other hand the series EX extends its capabilities especially in the field of telemetric data transfer and offers thus an even better insight into the state of the model. Full utilization of the new properties is supported by the **JETIBOX PROFI** terminal, which offers improved imaging possibilities and user comfort. In connection with the program package FlightMonitor it facilitates parameter setups of particular system components, enables data processing and monitoring of telemetric data during flight and delivers tools for exact after flight analysis of data collected during flight. This way it implements a new dimension into the management and utilization of the whole system.

An additional satellite receiver RSat complements the receivers **R9, R10, R11, R12, R14** and **R18**. This receiver is a full DUPLEX system receiver offering the complete functional spectrum of the system. Instead of classical servo pulses the output of the RSat receiver offers a PPM signal only. This PPM signal is furtheron processed by the receivers **R9, R10, R11, R12, R14, R18** or by compatible RC equipment which requires a PPM signal at the input.

Current Supply:

The receiver current supply can be realized either by application of NiCd batteries, by stabilized voltage supplies provided by controllers (electric flight) or by Li-xx cells via stabilizers like the MAX BEC. But it is of utmost importance to keep always the allowed supply voltage range of the receiver and servos in mind. If all servo connectors are engaged by servos an Y-cable can be used for current supply. The supply batteries of the BEC or the Y-cable can be connected to any arbitrary receiver output, but do by no means use the output marked Ext. for receiver current supply purposes.

The receivers **EPC R11, R12, R14** and **R18** are equipped with a separate MPX supply connector. We recommend to use this connector for the receiver current supply and servos because of its high current load capability and reliability.

Operation:

Operation of the DUPLEX system is very similar to a FM system. We recommend switching on the transmitter first and thereafter the receiver. The transmitter confirms the on state of the receiver by a short beep. When switching off the system we recommend to switch off the receiver first and after that the transmitter.

Installation:

Wrap the receiver with soft foam and position it as far as possible away of interference sources (servos, electric motors). Place the active ends of the antennas with an angle of 90° inbetween and as far away as possible of each other. The minimum bending radii of the antenna cables should not be smaller than 1 cm. The active parts of the antenna must remain straight and should be kept as far off as possible of metal parts. If the model fuselage consists of carbon fibre the active antenna parts should protrude through the fuselage wall to the outside.

Pairing:

Before using a new receiver or transmitter they must be first of all bilaterally paired. The information flow between receiver and transmitter occurs on a full digital basis, therefore the equipment which is mutually communicating in a common frequency band must be equipped with an address. Pairing (addressing of the equipment) is realized by plugging in of the so called BIND PLUG into the connector for external equipment marked Ext. and by switching on the receiver. After that the transmitter is switched on and confirms pairing with the receiver by a double beep. Remove the bind plug from the receiver. The transmitter draws attention to the presence of a bind plug in the receiver by acoustic signals.

It is also possible to perform pairing without BIND PLUG with aid of the JETIBOX. In that case the JETIBOX must be connected directly to the receiver. Select at the JETIBOX the position (pairing) and push the key U (arrow up). The receiver is waiting now for switching on of the transmitter with which pairing shall be carried out. The transmitter reports pairing by a double beep and everything is ready for operation. Should pairing be unsuccessful, switch off transmitter and receiver and repeat the whole procedure as described above.

It is possible to pair an arbitrary number of receivers to one transmitter. The receiver itself can be paired to one transmitter only, that means that the receiver is paired to that transmitter to which it has been paired eventually.

Telemetric Data Transfer in Real Time:

Any receiver allows transfer of the actual on board system voltage, that means of the receiver voltage without telemetric sensors.

It is possible to connect a telemetric sensor directly to the receiver connector marked (Ext.). If you wish to use several sensors you may take advantage of the expander DUPLEX Ex which must in that case be connected to the receiver connector (Ext.).

Alerting in Case of Bidirectional Signal Loss:

In case of loss of bidirectional communication between transmitter and receiver the transmitter DUPLEX module reports this event by acoustic signals. This situation means that at the given instant there are no data available of telemetric sensors or equipment connected to the receiver input (Ext.). But the model can in this situation still be controlled.

Description of JETIBOX you will find in page number 25.

We wish you successful flying with the products of: **JETI models.r.o. Pribor, www.jetimodel.com**

Table 1. - DUPLEX Rx ReceiversR4-R8:

* External Power Connector

Basic Data	R4	R4C (R4Cmini)	R5 (R5 indoor)	R6 (R6 EPC*)	R6F indoor R6G indoor	R7 (R7 indoor)	R8 (R8 EPC*)
Dimensions [mm]	35x 20x7	30x23x13	44x20x7	45x24x12	38x20x6	44x20x7	50x30x12
Weight [g]	4,8	8 (7)	5,2 (4,8)	11 (14)	3	5,5	15 (18)
Antenna Length [mm]	2x100	1x200 (internal)	2x100 (2x45)	2x100	30	2x100 (2x45)	2x200
# of Channel Outputs	4	4	5	6	6	7	8
Temperature Range [°C]	-10 to +85	-10 to +85	-10 to +85	-10 to +85	-10 to +85	-10 to +85	-10 to +85
Supply Voltage [V]	3.2 – 8.4	3.2 – 8.4	3.2 – 8.4	3.2 – 8.4	3.2 – 8.4	3.2 – 8.4	3.2 – 8.4
Average Current [mA]	40	40	40	45	40	40	45
Real Time Transmission of Telemetric Data	YES	YES	YES	YES	YES	YES	YES
Programming	JETIBOX	JETIBOX	JETIBOX	JETIBOX	JETIBOX	JETIBOX	JETIBOX
Support Satellite Receiver Rsat	NO	NO	NO	NO	NO	NO	NO
Power Output [dBm]	6	6	6	20	6	6	20
Receiver Sensitivity [dBm]	-98	-98	-98	-100	-98	-98	-106

Communication with the DUPLEX Receiver with aid of the JETIBOX

The JETIBOX can be connected to the receiver in two ways:

1. By direct connection JETIBOX <-> receiver

Plug the connector of the interconnecting cable (enclosed in the JETIBOX package) into the receptacle marked Impuls + - (positioned at the right side of the JETIBOX) and the other end into the receiver receptacle marked Ext. Connect the current supply to the receiver (see current supply) or to the current supply receptacle of the JETIBOX.

2. By wireless connection JETIBOX <-> transmitter <-> receiver

In that case the JETIBOX must be connected to the transmitter. Switch on the transmitter and connect the current supply of the receiver.

The display shows the text Tx and arrows to the right and down. You may enter the receiver menu by pushing the key R (arrow right), the display shows the text Rx after that you enter the receiver menu by pushing key D (arrow down). The display picture corresponds to the picture as shown in case of direct connection (see item 1).

Wireless connection with the receiver is possible in Normal mode only. If you would during wireless connection change from Normal mode to Clone mode, the receiver would switch to monitoring mode and the JETIBOX would stop to respond. In order to renew communication with the receiver the JETIBOX will have to be reconnected to the receiver directly, see item 1. In case of using a receiver which has before been working in monitoring mode (Clone) in an other model, do not forget to set it back to the original mode (Normal).

The JETIBOX can be disconnected only after the receiver has been also disconnected from its voltage supply. It is anytime possible to follow up the condition of the receiver or to set up its parameters even during its operation in the model, but this ought to be done very carefully. Setups should be carried out only if security of the model against damage and of persons against injury is warranted. As an important safety measure an accidental motor start should be prohibited by all means, removing the propeller from the model might be very helpful!

Communication with the Expander DUPLEX Ex by taking advantage of the JETIBOX (JB):

Plug the connector of the interconnecting cable (enclosed in the JETIBOX package) into the receptacle marked (Rx) at the back of the expander and the other end into the receptacle of the receiver marked (Ext.). Connect the JETIBOX to the transmitter module. Switch on the transmitter and connect the current supply to the receiver (see current supply). In the JETIBOX display there appears the text Tx and by pushing key R (arrow right) twice you will select the item Mx. By pushing key D (arrow down) will enter expander menu. The main menu (selection of the connected device Tx, Rx, Mx) will be attained by holding down key U (arrow up) for a longer time.

Overview of Receiver Data Items

The introductory display shows the type of receiver. By pushing of key R (arrow down) more detailed data of receiver and transmitter can be cued.

Pairing: by pushing the key U (arrow up) pairing of the receiver with the transmitter will be executed. Pairing of the receiver should only be carried out when the JETIBOX is directly connected to the receiver.

RX/TX: Item RX shows the unic production number of the receiver. Item TX shows the unic production number of the transmitter, to which the receiver has eventually been paired.

Rx Diag: Item A1 or A2 shows which antenna the receiver is using at present. Item Kx informs about the number of transferred channels (this number depends of the transmitter abilities).

By means of key D (arrow down) you arrive at the line of basic mode selections, where you may select read out of measured values (Measure) or setup of the receiver (Main setting, Channel set, Out Pin Set, Auto Set).

Measure: enables read out of measured data of the maximum, minimum and actual receiver voltage.

-Volt Min / Act / Max : the receiver is checking the supply voltage and indicates limit values and extremes which occurred during operation; at the same time it also shows the actual receiver voltage. Without switching on the paired transmitter the values MAX and MIN will not change, only the value of the actual voltage ACT will be updated. In order to delete values MAX and MIN, keys L (arrow left) and R (arrow right) must be pressed simultaneously.

Main setting: Basic setup, here you may adjust general properties of the receiver which are common to all output channels.

- Signal Fault Delay: specifies the deadline after which the receiver outputs change due to signal loss to preadjusted positions of the particular outputs or after which they become switched off (due to setup of Signal Fault in the menu Out Pin Set).

- Volt act/alarm: the first item shows the actual receiver supply voltage, the second value serves for the setup of the alert decision threshold. As soon as during operation the actual voltage decreases below the set threshold, the transmitter will announce this situation by an acoustic tone.

- Output Period: setup of the output signal period (standard setup 20ms), analog servos respond faster with lower values (shorter response time) and consume more current. If the value is set too low some servos may chatter. The output period may also be synchronized with the transmitter - Output Period - By Transmitter.

-RX mode: this setup switches the receiver to monitoring mode (Clone). This mode should only be used in applications with two or more receivers, working simultaneously in a model in connection with a single transmitter module. One receiver should work as master receiver (Normal) and the others in monitoring mode (Clone). The mode change (Normal / Clone) must be carried out only with the JETIBOX connected directly to the receiver. Telemetric sensors can be operated with a receiver in Normal mode only.

-PPM Output mode (applicable to RSat receivers only) Setup of the satellite receiver mode

-Computed: the signals received from the transmitter can be processed furtheron in the receiver and its menus Channel set and Out Pin Set (mixers, programmable channel outputs a.s.o.)

-Direct: signals received from the transmitter are not furtheron processed in the receiver, they are generated without any change at the output of the satellite receiver in form of PPM signals

-Number of PPM Output Pulses: (valid for RSat and RMK) Setup of PPM pulse number at the Rsat receiver. If there are transmitted less channels than the set number of PPM pulses at the receiver, then the remaining pulses will be replaced by one pulse with a length corresponding to the pulse length adjusted in the FailSafe menu of the given channel. In the reverse case the number of output pulses will be reduced to the default setting number.

-**Signal fault:** (valid for RSat and RMK) behaviour setup of the satellite receiver in case of signal loss.

- **Individual set:** the behaviour of the output in case of a signal loss will be conducted by the setup of particular channels in the menu Measurement/Setup – Setup of the output, where the behaviour of particular output channels in case of signal loss may be set – to repeating of the last deviation or to FailSafe.

- **Output switching off:** in case of signal loss, after the elapse of the set time in the menu FailSafe Retard there will exist no more PPM pulse generation at the receiver output.

- **Menu display:** allows menu setup in full or reduced shape. In the reduced menu display are for the sake of setup simplification some of the selected items not shown. But all receiver setups are taken into account, even the given item is not shown in the reduced menu.

Channel set: parameter setup of (received) individual input channels CH

-**Set Input Channel:** selection of the input channel which has to be set up, value A represents the actual throw of the selected input channel.

-**Set Center:** neutral position setup of the input channel, this parameter is important for further processing of mixers, reverse, gain etc.

-**Mix CHa and CHb:** makes mixing of the selected channel with another channel feasible.

-**Mix Relation:** setup of the mixing ratio, the mixed channel always features a ratio of 50%. For instance, mixing of CHa and CHb with a ratio of 100% = 50% CHa and 50% CHb, a ratio of 50% = 50% CHa and 25% CHb, a ratio of 200% = 50% CHa and 100% CHb.

-**Mix Sign:** the first sign of the mixed channel specifies whether the channels are subtracted or added

Out Pin Set: Relation of functions to individual output channels (pins) Y of the receiver.

-**Set Output Pin:** Selection of the output channel whose setup you want to show or change.

It is possible to add to a R10, R12, R14, R18 Duplex receiver two satellite receivers or further R10, R12, R14, R18 receivers. In case of the Duplex R18 (R12) receiver it is possible to switch output Y17 (Y12) to the function Sat2 and output Y18 to Sat1. The output channel marked Sat 2 may be set to receiving mode or to generation of PPM signals. This function is of use in case of a bidirectional connection of several receivers or satellite receivers. The output channel marked Sat 1 can be set to PPM signal mode only.

-**Set mode SAT:** on the Duplex receivers R9, R10, R11EPC, R12EPC, R14, R18 the outputs SAT1 and SAT2 can be affiliated with following functions

- **PPM Off:** the particular output is neither generating nor receiving a PPM signal

- **PPM Input:** the particular input is expecting a PPM signal of the connected receiver

- **PPM Output:** the receiver will generate PPM signals on output SAT2

-**Set mode SAT:** on the Duplex receivers R11, R12, R18 the outputs SAT1 and SAT2 can be affiliated with following functions

- **CHxx:** the PPM signal on the particular output will neither be generated nor received. The output has the same function like the outputs Y1-Y16.

- **PPM Input:** the particular input is expecting a PPM signal of the connected receiver

- **PPM Output:** the receiver will generate PPM signals on the output SAT2

- **PPM Alarm Code:** if one of the outputs SAT1/2 is set to PPM input mode, an acoustic signal can be set up which reports absence of the connected signal. By means of loading a morsealphabet character tones are set, which acoustically announce the absence of the PPM signal at the particular receiver input. These acoustic signals are generated by the transmitter module.

- **Set Input Channel:** function affiliation to particular outputs, any input channel or its mixing product which may be specified in the menu Channel Set can be set up.

- **Reverse A:** makes throw reverse at the output in the half plane A possible, the half planes are subdivided according to the neutral position setup (Channel set - Set Center)

- **Reverse B:** makes throw reverse at the output in the half plane B possible

- **Gain A:** Amplification of the output throw in half plane A (100% - without changes)

- **Gain B:** Amplification of the output throw in half plane B (100% - without changes)

- **Signal Fault:** setup of the receiver behaviour in case of signal loss, repeat- repetition of the last valid throw positions, out off – output switched off, FailSafe – transition to preset throw positions of individual outputs which may be set up in the FailSafe menu.

- **FailSafe:** throw setup of a selected output in case of signal loss

- **Delay:** delay of servo speed (at the output) in case of a change at the input, the entry time corresponds with the transit time within the output range between 1ms to 2ms which, for instance, may be suitable for retracting a landing gear

- **Curve:** Setup of a channel output curve

- **ATV High Limit:** restriction (reduction) of the maximum throw of a particular output (half plane B)

- **ATV Low Limit:** restriction (reduction) of the maximum throw of a particular output (half plane A)

- **Output Group:** setup of a particular output for a selected group of output pulses, which are generated by the receiver at the same time. See page 56.

Auto Set: complete receiver preset for predefined functions. After selection of the desired function the receiver setup is executed by simultaneous pressing of the left and right JETIBOX keys for about 3 seconds.

- **Normal:** basic setup, mixers switched off, individual input channels are affiliated to corresponding outputs, i. e. input CH1 is affiliated to output Y1 etc.

- **MixCH1&CH2 Elevon:** affiliates the mix of the received CH1 and CH2 to the output channels Y1 and Y2

- **MixCH2&CH4V-Tail:** affiliates the mix of the received CH2 and CH4 to the output channels Y2 and Y4

Receiver		R9	R10	R11EPC	R12EPC	R14	R18
SAT 1	PPM IN	•	•	•	•	•	•
	PPM OUT	–	–	–	–	–	–
	OUT Yx	–	–	Y11	–	–	Y18
SAT 2	PPM IN	–	•	–	•	•	•
	PPM OUT	–	•	–	•	•	•
	OUT Yx	–	–	–	Y12	–	Y17

Auto Set – Normal = default setup, all received channels CH will be transferred without change to corresponding outputs Y, that means the receiver behaves like a classical non programmable receiver.

Channel Set				
SetInputChannel CHx	Set Center	Mix CHx and CHy	Mix Relation	Mix Sign
CH1	1,5ms	CH1 and CH1	100%	+
CH2	1,5ms	CH2 and CH2	100%	+
CH3	1,5ms	CH3 and CH3	100%	+
CH4	1,5ms	CH4 and CH4	100%	+
CH5	1,5ms	CH5 and CH5	100%	+
CH6	1,5ms	CH5 and CH6	100%	+
CH7	1,5ms	CH7 and CH7	100%	+
CH8	1,5ms	CH8 and CH8	100%	+

Out Pin Set

Set Output Pin	Set In Channel	Reverse A	Reverse B	Gain A	Gain B	Signal Fault	Fail Safe	Delay	Curve	ATV High Limit	ATV Low Limit	Output trim	Output group
Y1-Y18	CH1-CHx	off	off	100%	100%	Fail save	1,5ms	0s	linear	2,0ms	1,0ms	0,0ms	A

Samples of receiver setup:

(changes against default values are marked **bold** in the tables)

1. V-tail: models with combined tail planes, each plane is controlled by one servo on channels Y2 and Y4, mix combines moves of rudder CH4 and elevator CH2. Motor on CH3. In case of reverse sense of the mix change the sign in menu **Mix Sign**.

Transmitter channel	Channel Set					Set Center	Mix CHx and CHy	Mix Relation	Mix Sign
	SetInputChannel CHx	Reverse A	Reverse B	Gain A	Gain B				
Elevator	CH2					1,5ms	CH2 and CH4	100%	-
Motor	CH3					1,5ms	CH3 and CH3	100%	+
Rudder	CH4					1,5ms	CH4 and CH2	100%	+

Function	Out Pin Set										
	Set Output Pin	Set In Channel	Reverse A	Reverse B	Gain A	Gain B	Fail Safe	Delay	Curve	ATV HighLimit	ATV LowLimit
Servo 1	Y2	Mix CH2	off	off	100%	100%	1,5ms	0s	linear	2,0ms	1,0ms
ESC	Y3	CH3	off	off	100%	100%	1,2ms	0s	linear	2,0ms	1,0ms
Servo 2	Y4	Mix CH4	off	off	100%	100%	1,5ms	0s	linear	2,0ms	1,0ms

2. Elevon: both ailerons are controlled by independent servos on channels Y1 and Y2, move like standard ailerons on input CH1 (one up, second down) and at the same time like elevators on input CH2 (up/down simultaneously). In case of reverse sense of the mix change the sign in menu **Mix Sign**.

Transmitter channel	Channel Set		Set Center	Mix CHx and CHy	Mix Relation	Mix Sign
	Set Input Channel	CHx				
Elevator		CH2	1,5ms	CH2 and CH1	100%	+
Ailerons		CH1	1,5ms	CH1 and CH2	100%	-

Function	Out Pin Set		Reverse A	Reverse B	Gain A	Gain B	Fail Safe	Delay	Curve	ATV HighLimit	ATV LowLimit
	Set Output Pin	Set In Channel									
Servo 1	Y2	Mix CH2	off	off	100%	100%	1,5ms	0s	linear	2,0ms	1,0ms
Servo 2	Y1	Mix CH1	off	off	100%	100%	1,5ms	0s	linear	2,0ms	1,0ms

3. Combination of rudder CH4 and front gear direction control (with deflection reduced on 60% of rudder deflection), rudder on output Y4 and front gear turn (direction) on output Y7. Gear retraction on output Y8 (realistic retraction with set **Delay**, exact servo endstops set - **ATV**).

Function	Out Pin Set		Reverse A	Reverse B	Gain A	Gain B	Fail Safe	Delay	Curve	ATV HighLimit	ATV LowLimit
	Set Output Pin	Set In Channel									
Rudder	Y4	CH4	off	Off	100%	100%	1,5ms	0s	linear	2,0ms	1,0ms
Gear	Y7	CH4	off	Off	60%	60%	1,5ms	0s	linear	2,0ms	1,0ms
Gear	Y8	CH8	off	Off	100%	100%	1,82ms	5,0s	linear	1,82ms	1,26ms

4. Mix of ailerons Y1 and rudder Y4 (Combi - mix): rudder CH4 moves together with ailerons CH1 (mix); rudder can be still controlled in full range. Useful for scale models.

Transmitter channel	Channel Set		Set Center	Mix CHx and CHy	Mix Relation	Mix Sign
	Set Input Channel	CHx				
Rudder		CH4	1,5ms	CH4 and CH1	25%	+
Ailerons		CH1	1,5ms	CH1 and CH1	100%	+

Function	Out Pin Set		Reverse A	Reverse B	Gain A	Gain B	Fail Safe	Delay	Curve	ATV HighLimit	ATV LowLimit
	Set Output Pin	Set In Channel									
Rudder	Y4	Mix CH4	off	off	200%	200%	1,5ms	0s	linear	2,0ms	1,0ms
Ailerons	Y1	CH1	off	off	100%	100%	1,5ms	0s	linear	2,0ms	1,0ms

5. Mix of elevator CH2 and flaps CH6: when flaps Y6 move, also elevator Y2 moves in opposite direction.

Transmitter channel	Channel Set		Set Center	Mix CHx and CHy	Mix Relation	Mix Sign
	Set Input	Channel CHx				
Flaps		CH6	1,5ms	CH6 and CH6	100%	+
Elevator		CH2	1,5ms	CH2 and CH6	25%	-

Function	Out Pin Set		Reverse A	Reverse B	Gain A	Gain B	Fail Safe	Delay	Curve	ATV HighLimit	ATV LowLimit
	Set Output Pin	Set In Channel									
Elevator	Y2	Mix CH2	off	off	200%	200%	1,5ms	0s	linear	2,0ms	1,0ms
Flaps	Y6	CH6	off	off	100%	100%	1,5ms	0s	linear	2,0ms	1,0ms

6. Flaperon: mixes aileron CH1 and flaps (or airbrakes) CH6. Each aileron is controlled by independent servo Y1 and Y2, ailerons work normally depending on stick position. At the same time, ailerons may move up (airbrakes) or down (flaps) – depending on flap control.

Transmitter channel	Channel Set		Set Center	Mix CHx and CHy	Mix Relation	Mix Sign
	Set Input	Channel CHx				
Flaps		CH6	1,5ms	CH6 and CH1	100%	+
Ailerons		CH1	1,5ms	CH1 and CH6	100%	-

Function	Out Pin Set		Reverse A	Reverse B	Gain A	Gain B	Fail Safe	Delay	Curve	ATV HighLimit	ATV LowLimit
	Set Output Pin	Set In Channel									
Servo 1	Y2	Mix CH6	off	off	100%	100%	1,5ms	0s	linear	2,0ms	1,0ms
Servo 2	Y1	Mix CH1	off	off	100%	100%	1,5ms	0s	linear	2,0ms	1,0ms

7. Mix flaps-elevator: elevator CH2 automatically balances diving moment caused by move of flaps CH6. At the same time, there is a mix flaps-aileron (aileron act as flaps).

Transmitter channel	Channel Set		Set Center	Mix CHx and CHy	Mix Relation	Mix Sign
	Set Input	Channel CHx				
Ailerons		CH1	1,5ms	CH1 and CH6	100%	-
Elevator		CH2	1,5ms	CH2 and CH6	25%	+
Flaps		CH6	1,5ms	CH6 and CH1	100%	+

Function	Out Pin Set		Reverse A	Reverse B	Gain A	Gain B	Fail Safe	Delay	Curve	ATV HighLimit	ATV LowLimit
	Set Output Pin	Set In Channel									
Aileron 1	Y1	Mix CH1	off	off	100%	100%	1,5ms	0s	linear	2,0ms	1,0ms
Elevator	Y2	Mix CH2	off	off	200%	200%	1,5ms	0s	linear	2,0ms	1,0ms
Aileron 2	Y6	Mix CH6	off	off	100%	100%	1,5ms	0s	linear	2,0ms	1,0ms

8. Mix ailerons-flaps: both flaps and ailerons are on the wings. CH1 controls ailerons (Y1 and Y5), CH6 controls flaps (Y6 and Y7). Mixes ailerons so that they work also like flaps.

Transmitter channel	Channel Set					
	Set Input Channel	CHx	Set Center	Mix CHx and CHy	Mix Relation	Mix Sign
Ailerons	CH1		1,5ms	CH1 and CH6	100%	+
Flaps	CH6		1,5ms	CH6 and CH1	100%	-

Function	Out Pin Set										
	Set Output Pin	Set In Channel	Reverse A	Reverse B	Gain A	Gain B	Fail Safe	Delay	Curve	ATV HighLimit	ATV LowLimit
Aileron 1	Y1	Mix CH1	off	off	100%	100%	1,5ms	0s	linear	2,0ms	1,0ms
Aileron 2	Y5	Mix CH6	off	off	100%	100%	1,5ms	0s	linear	2,0ms	1,0ms
Flap 1	Y6	CH6	off	off	100%	100%	1,5ms	0s	linear	2,0ms	1,0ms
Flap 2	Y7	CH6	on	on	100%	100%	1,5ms	0s	linear	2,0ms	1,0ms

9) The receiver outputs will be programmed in such a manner that outputs **Y1, Y2 and Y3** will be affiliated with the same transmitter function. Servos connected to these inputs will be steering the same control device (for instance the elevator) and will be coupled mechanically. On the transmitter is this function affiliated with the first channel **CH1**.

Out Pin Set													
Set Output Pin	Set In Channel	Reverse A	Reverse B	Gain A	Gain B	Signal Fault	Fail Safe	Delay	Curve	ATV High Limit	ATV Low Limit	Output trim	Output group
Y1	Ch1	off	off	100%	100%	Fail safe	1,5ms	0s	linear	2,0ms	1,0ms	0,0ms	A
Y2	Ch1	off	off	100%	100%	Fail safe	1,5ms	0s	linear	2,0ms	1,0ms	0,0ms	A
Y3	Ch1	off	off	100%	100%	Fail safe	1,5ms	0s	linear	2,0ms	1,0ms	0,0ms	A

All outputs are affiliated with the input channel CH1 of the transmitter. Setups of reverse, gain, FailSafe, delay, curves and ATV Limits check with all channels. The output channels are as well set up for the same group of servo pulse generation. The servos will be temporally synchronized and accordingly movements of all servos will be synchronized. Before mechanical coupling of individual servos (it is advantageous to use servos of the same type) we recommend to bring them all with the aid of function „Output Trim“ to the same neutral position in order to prevent reciprocal loads of the servos. The setup of equal endpoint throws can be achieved by gain changes of the individual channels with the aid of „Gain A/B“.

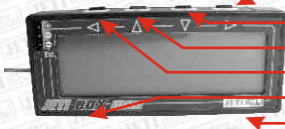
10) Setup of different behaviour patterns of receiver outputs in case of transmitter signal loss. The throttle is affiliated with the receiver output channel **Y3** and the other servos are connected to the remaining receiver outputs. In case of a signal loss we claim all servos to stop in their last positions and the motor must be switched off.

Out Pin Set													
Set Output Pin	Set In Channel	Reverse A	Reverse B	Gain A	Gain B	Signal Fault	Fail Safe	Delay	Curve	ATV High Limit	ATV Low Limit	Output trim	Output group
Y1, Y2, Y4, ...	Ch1, Ch2, Ch4, ...	off	off	100%	100%	Repeat	-	0s	linear	2,0ms	1,0ms	0,0ms	A, B, ..
Y3	Ch3	off	off	100%	100%	Fail safe	1,2ms	0s	linear	2,0ms	1,0ms	0,0ms	C



**ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS**

JETI BOX mini



Button right

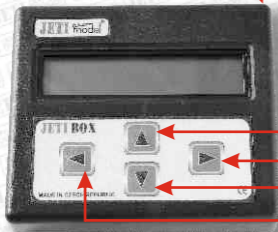
Button down

Button up

Button left

Button for switching input Ext./Tx

Button backlight



Button UP U

Button RIGHT R

Button DOWN D

Button LEFT L

JETI BOX

Button LEFT

Button DOWN

Button UP

Button RIGHT



JETI BOX profi

Wiring Example of the receiver R18:

Connection of receiver RSat to the input SAT1 of the receiver R18

The receiver RSat gets its current supply from receiver R18 and is paired with the transmitter module Tx. We recommend not to exceed a connection cable length of 2 meters between the receivers R18 and RSat.

Setup of receiver Rsat:

Menu Main Setting:

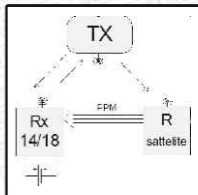
- Rx mode: Clone—setup of the satellite receiver to monitoring mode

- PPM Output mode: Direct— setup of the satellite receiver to the mode of direct PPM signal generation, i. e. without changes in the receiver. With this setup the PPM signal is generated in the same configuration as it was loaded by the encoder into the transmitter module. Any claims for signal changes in the receiver are set up in the main receiver R18.

- **Signal Fault:** Out Off—if the satellite receiver will not receive any signals from the transmitter, there will be no PPM output signal generated at the RSat output and the transmitter module will report this situation by an acoustical signal (if the alarm for PPM signal loss in the R18 receiver is activated)

Setup of the receiver R18:

Menu Out Pin Set – SetInChannel Y18— select item PPM input, in that case you will be furtheron able to set up the alarm for PPM signal loss at the input of SAT1 – PPM Alarm Code A.



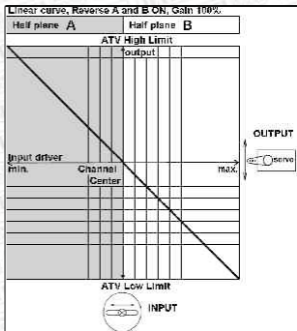
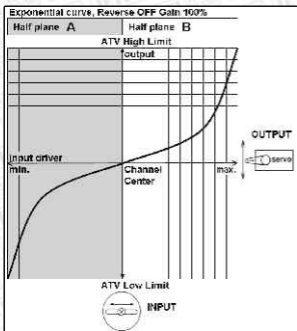
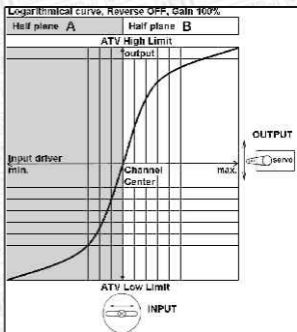
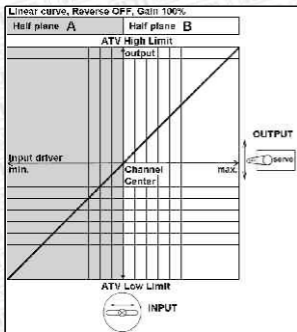
For receivers we grant a warranty of 24 months from the day of purchase under the assumption that they have been operated in conformity with these instructions at recommended voltages and that they were not damaged mechanically. Warranty and post warranty service is provided by the manufacturer.

We wish you successful flying with the products of:

JETI model s.r.o. Příbor, www.jetimodel.com

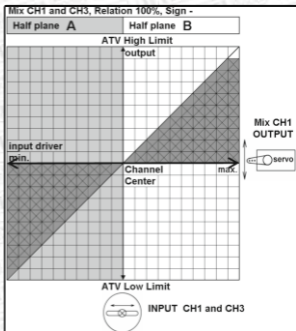
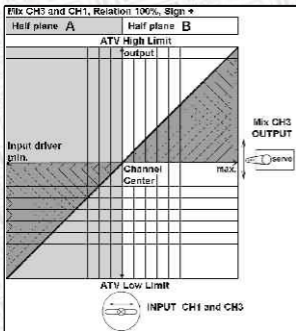
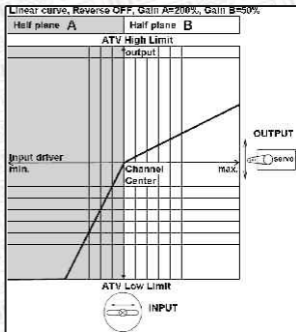
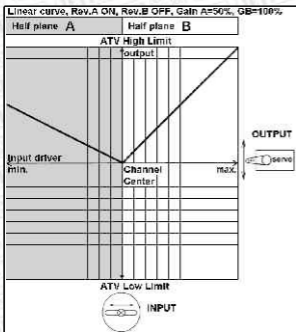
Samples of output channels depending on inputs and receiver setup:

Beispiele der Abhängigkeit der Ausgangskanäle vom Eingang und von der Empfängereinstellung:





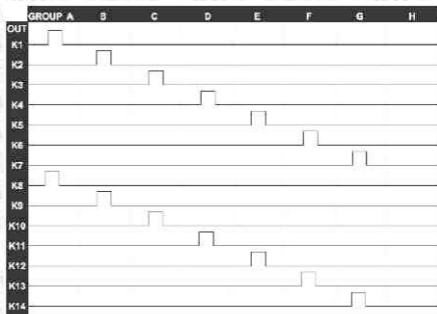
ELECTROSTATIC SENSITIVE DEVICE OBSERVE HANDLING PRECAUTIONS



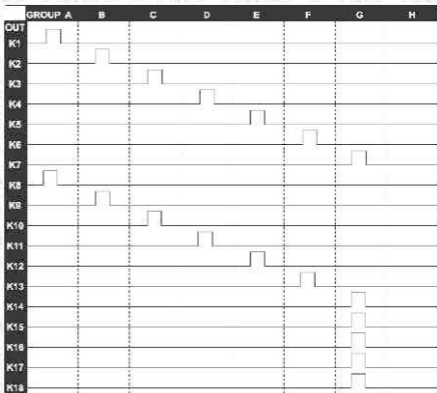
1

Default setup of the R14(1) and R18(2) receiver Output Groups (Production Setup)

Einstellung der Ausgangsgruppen des Empfängers R14(1) und R18(2) ab Werk



2



ENGLISH

Information on Disposal for Users of Waste Electrical & Electronic Equipment (private households)



This symbol on the products and/or accompanying documents means that used electrical and electronic products should not be mixed with general household waste.

For proper treatment, recovery and recycling, please take these products to designated collection points, where they will be accepted on a free of charge basis. Alternatively, in some countries you may be able to return your products to your local retailer upon the purchase of an equivalent new product.

Disposing of this product correctly will help to save valuable resources and prevent any potential negative effects on human health and the environment which could otherwise arise from inappropriate waste handling. Please contact your local authority for further details of your nearest designated collection point.

Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.

For business users in the European Union

If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

Information on Disposal in other Countries outside the European Union

This symbol is only valid in the European Union.

If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.