



KRT2

VHF Communication Transceiver

Standard, Landscape, Portrait



- Part No 285942 = KRT2-S (Standard)
- Part No 285945 = KRT2-L (Mini Landscape)
- Part No 286048 = KRT2-P (Mini Portrait)
- Part No 285946 = KRT2-RC (Remote Control)

Operation- and Installation Manual

3. CONTROL general

3.1 Control elements overview

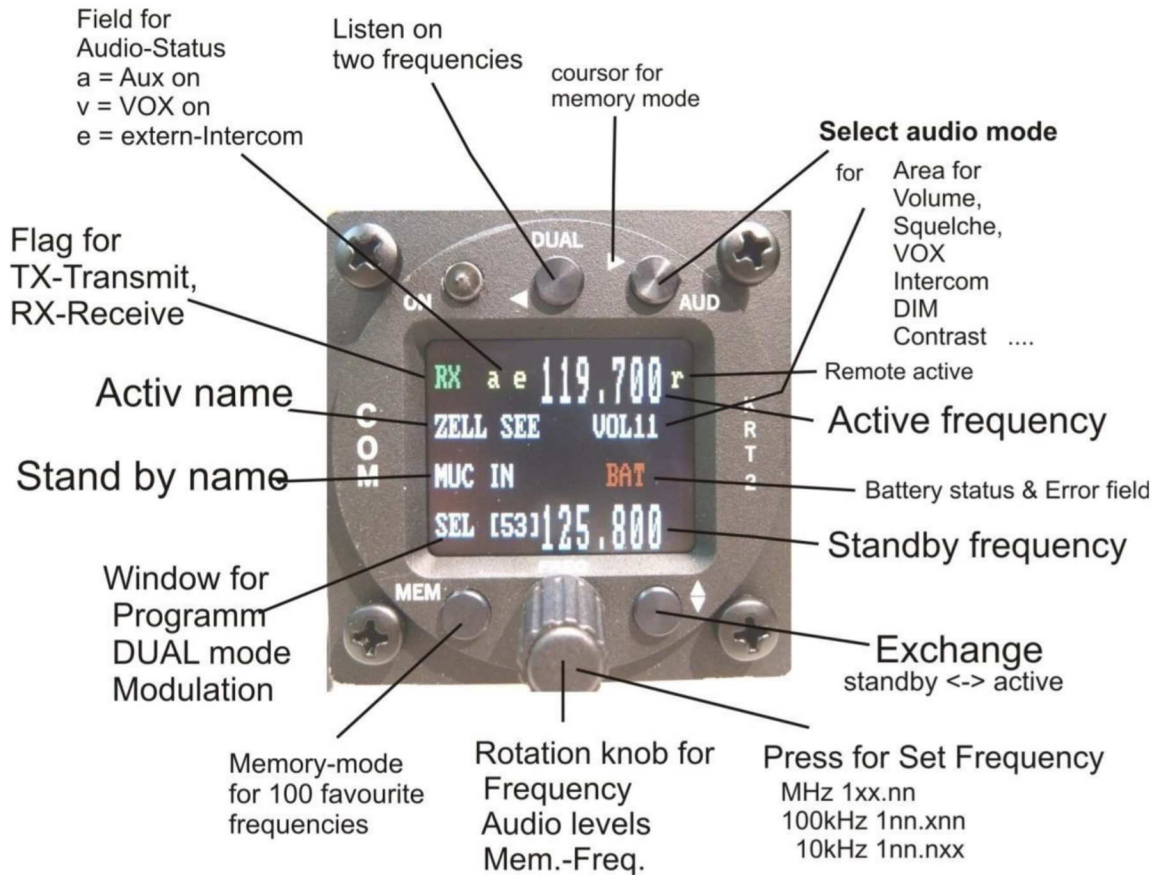


Figure 1: KRT2-S Front View







Button	Function	Usage
	ON / OFF	Self-locking switch
	DUAL WATCH	<ol style="list-style-type: none"> 1. Scanning between the Active and Standby frequencies 2. Positioning cursor to the left when programming the station identifier
	AUDIO SELECT	<ol style="list-style-type: none"> 1. Stepping through the audio menus 2. VOL SQ VOX TX INT EXT DIM CON SIT and MIC 3. Positioning cursor to the right when programming the station identifier
	FAVORITES	<ol style="list-style-type: none"> 1. Frequency and identifier selection from the favourites list 2. Programming of favourites (frequency and identifier)
	EXCHANGE	Exchange of the Active and Standby frequencies
	TURNING KNOB	<p>Pressing for Selection of the frequency range to: MHz, 100kHz, 10kHz</p> <p>Toggles between frequency and identifier when programming the favourites</p> <p>Sets all variable values in any menu</p> <ul style="list-style-type: none"> • Volume setting of headsets and speakers • MHz/kHz selection of the standby • frequency in 3 different ranges • Favourite selection • Alpha character selection when programming favourites • Change of microphone settings

Table 4: KRT2 Controls



3.2 Display

Indication	Meaning	Remark
RX	Reception	RX is displayed during reception (squelch opened)
TX	Transmission	Transmitter operates normally
Te	Transmitter was turned off automatically after 2 min continuous operation	
119.700	Frequency	
ZELL SEE	Frequency station identifier	Displayed when frequency and identifier are stored in the favourite list
MUC IN	Standby frequency station identifier	Displayed when frequency and identifier are stored in the favourite list
VOL	Receiver volume level (default after a certain time delay)	When AUD is pressed the corresponding Audio Menu item and setting is displayed
DUAL	DUAL function is activated	DUAL function is deactivated by DUAL, FREQ or MEM
[03] (MEM)	Favourite list index (0-99)	When frequency and identifier are stored at this index ex:[03] they are displayed
125.100 upper	Active frequency	Displayed in large fonts.
125.800 lower	Standby/DUAL - frequency	Displayed in large fonts.
<	The pointer indicates what the turning knob will change VOL SQ VOX.....etc. Standby frequency	Arrow is positioned according to the button pressed (AUD or FREQ)
BAT	Supply voltage is low <10,5V	Low or defective battery / generator.
A-match	Antenna error	Bad antenna match
a v e	Status of certain Audio menu functions	a = AUX. Input active v = VOX active e = external Intercom switch active

Table 5: KRT2 Display



3.3 Menu levels

Displayed	Signification	Remark
VOL	Volume	Default
SQ	Squelch	
VOX	Voice operated	Voice operated intercom
DIM	Display brightness	
BAT(tst)	DC source check	
INT	Intercom - Volume	
EXT	Volume of external devices	
TX(m)**	PTT button selection	Left/Right/Both
SIT	Side tone	During transmitter operation
MIC	Setup-Menu for Microphones	Service-Menu without radio operation.

Table 6: KRT2 Menu Levels

3.4 Self-test error reports

Display	Meaning	Remark
Er_PLL	Internal error, no transmission	Return the transceiver for maintenance
Er_ADC	Internal error, operation limited	Return the transceiver for maintenance
Er_FPA	Internal error; unit not usable	Return the transceiver for maintenance
Er_I2C	Internal error; unit not usable	Return the transceiver for maintenance
Er_D10	Internal error; reception corrupt	Return the transceiver for maintenance
Error_3V3	Internal error; unit not usable	Return the transceiver for maintenance
Key_Block	Internal error; unit not usable	Return the transceiver for maintenance

Table 7: KRT2 Built In Tests (BIT)



4. OPERATION

4.1 General

In the normal operating mode in which the turning knob always is connected to the volume (VOL). The normal operating mode can be left by pressing the AUD, FREQ or MEMORY button.

When not in the normal mode and there is no pilot action for more than 10 seconds the unit returns to the normal mode.

4.2 ON / OFF switching

ON / OFF switching is done by pushing the self-locking switch.

After power up the following display will be displayed:



Device-name
KRT2

Software Version e.g. V8.6

(Example)

The unit starts in the normal operating mode using and displaying the data last used.

4.3 Frequency selection

There are two different frequency selection methods:

- Direct Input
- Selection from the favourite list (index 0-99)

4.3.1 Direct frequency selection



The Standby-Frequency is set with the turning knob in 3 different ranges. The selected range is highlighted and can be changed with the **FREQ** button. Frequency ranges are:

- 1xx.nnn
- 1nn.xnn
- 1nn.nxx

Press the **FREQ** button once or several times until the desired frequency range is highlighted. The unselected digits are displayed as dotted digits.




When the pointer is not next to the Standby Frequency window, it will be repositioned with the first pressing of the **FREQ** button.




Exchanges the Active and Standby frequencies.

When the Exchange button is not pressed, the Standby frequency display will return to its normal appearance after 20 seconds.

4.3.2 Frequency selection from favourites list

By pressing  and operating the turning knob a specific favourite list position can be accessed [xx] (xx = index 0 ... 99). When frequency and station identifier have been defined, they will be displayed in the Standby and station identifier windows.


The favourite identifiers list can be sorted in alphabetic order (see 4.3.3 Storing and Editing Favourites).

To exit this menu, press the  key.

The selection procedure can be terminated with either the AUD or FREQ buttons. Without pressing any of these buttons the unit will return to its normal operating mode after about 15 seconds.

4.3.3 Storing and editing favourites

Any displayed Standby Frequency can be associated with an identifier and both can be stored as favourites in the favourite list. The frequency and identifier of a favourite can be edited.

First press the  button and go to the desired favourite list position to be edited using the turning knob (index [00 ...99]).

Press the MEMORY button a second time and „-EDIT-„ will show up in the program window.



In the identifier window a blinking cursor will show up under the extreme left character.

The turning knob selects the desired character.

The AUD button positions the cursor one character to the right. The DUAL button positions the cursor one character to the left and simultaneously erases this character.

The station identifier can consist of a maximum of 8 characters/spaces.

To change frequency just press the FREQ button and follow the normal direct input procedure to edit the frequency, see “4.3.1 Direct Frequency Selection”.


To quit the frequency input press the MEMORY button again in order to go to the station identifier win-

down for editing the identifier if required. Using the buttons FREQ and MEMORY it is possible at any time to toggle between identifier and frequency inputs.


Keep in mind the watch dog timer which will terminate the input mode after 15 sec.



Termination and Save

To save the entered identifier, press the  key as the cursor is on the station name, "SAVE" will appear and the system will go back to the favourite selection.

A **sorting process** can be activated by pressing the "MEM" button again from the EDIT-mode.

"SORT?" will be displayed for 20 seconds and it should be activated with  or skipped with "MEM".



When activated all 99 favourites will be sorted in alphabetical order and the process can take several minutes.

During the sorting procedure "RUN nn" is displayed in the program window, with nn being the running index.

After a 6 seconds time out or by ending the sort, the transceiver resumes its normal operating mode.

When the "MEM" button is pressed at the time "RUN nn" is displayed, the sorting procedure is terminated. The favourite list is then partially sorted and the transceiver resumes its normal operating mode.

Example:

1. Button MEM -> SEL [23] = Select location
2. Button MEM -> -EDIT- = Input of name
 - Rotation knob to select the characters
 - For cursor use (AUD) (DUAL)
 - Frequency setting -> press rotating button
 - Use button MEM to go back to -EDIT-
3. Button  -> shortly SAVE -> back to 1.) (do nothing = cancelling)
4. Button MEM -> question for "SORT?" Yes = , No = MEM or do nothing.

If the function is abandoned before completion, it will be exited after a 6 seconds time out with no activity. The data will not be saved.

4.4 AUD – Audio menu



Any action in the Audio Menu requires the pointer (<) to be next to the Audio menu window (see picture). When the pointer is next to the Standby frequency window, the pointer can be repositioned by pressing the AUD button once.

VOLnn is the Audio menu default display. No action on any control for more than 10 seconds will result in the VOLnn being displayed.

Audio Menu items can be accessed in the following order by repeatedly pressing the AUD button.

VOL (default), SQ, VOX, TXm**, INT, EXT, DIM, BATtst, SIT, MIC

4.4.1 VOL – Volume

Turning the turning knob changes the receiver volume.

VOLnn Range: 01 – 20



The VOL setting only concerns the receiver and not the intercom system. Intercom volume values are set in the INT audio menu.

4.4.2 SQ – Squelch

Pressing the AUD button once enables the turning knob to change the squelch level values.

SQnn Value range: 01 – 10

The Squelch setting is depending on several factors.

For engine driven airplanes an initial setting of 3-5 is recommended. For gliders a setting of 2 is recommended. The lower the Squelch level value the higher is the input sensitivity. A high sensitivity setting is susceptible to noise from other sources like ignition strobe-lights etc.



Standard SQ-level is 3..5. Higher setting will suppress weaker input signals. 01 = Squelch off, 02 = for long range. Squelch does not influence the intercom system.



4.4.3 VOX – Intercom voice trigger level setting

Pressing the AUD button twice enables the turning knob to change the voice level which triggers the intercom.

The intercom voice trigger level must be set to a value which prevents normal cockpit noise from being heard in the earphones. The intercom system should only be activated when talking at a normal voice level into the microphone.

The higher the trigger level the louder the voice must be in order to trigger the intercom system. VOX on condition is indicated by flag “v”.

VOXnn Range: 01 – 10



The larger the value, the louder one must speak in order to activate the Intercom connection.
VOX on condition is indicated by flag “v”.
For installation with loudspeakers set VOX to 10 to switch it off.

4.4.4 Manual Intercom

With cockpit loud background noise or with uncompensated microphones the Intercom can be controlled manually by using an external switch. Therefore the VOX system must be activated permanently by selecting VOX: 01.

To turn off the Intercom the talk switch (default closed) must be opened, which will be indicated by “e”.

Deactivation of the intercom is done with an opened external microphone button (Ground connection to pin 12), this is indicated with an “e” on the display.

This mode only works with a deactivated external audio input (see “4.4.7 EXT – External Audio Input Volume”).

In gliders the VOX has to be set to 10 in order to disable the speaker control.

4.4.5 TXm – PTT switch selection

Pressing the AUD button three times enables the turning knob to enable certain PTT switches.

On transmission the microphone which is related to the PTT-L/R will be enabled. The equivalent indication is TX (TXm**), TX1 (TXm*-) TX2 (TXm-*).

On transmission the PTT-L/R related microphone will be the only one activated.

TXm** *- Left / -* Right / ** Both

4.4.6 INT – Intercom volume

Pressing the AUD button four times enables the turning knob to set the intercom volume.

INTnn Range: 1 – 9

4.4.7 EXT – External audio input volume

Pressing the AUD button five times enables the turning knob to set the external audio input volume. External audio inputs can be audio alarms, voice alarms, Vario, etc. The required level is 200mVpp (6Vpp max).

Activation occurs for settings >00 and will be indicated by “a”.

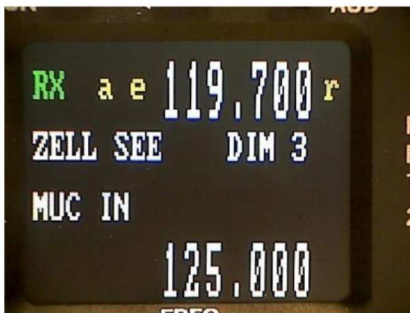
- 00 = turning off,
- 01 = lowest gain without threshold
- 09 = highest gain with interference suppression threshold.

EXTnn Range: 0 - 9

4.4.8 DIM – Display brightness

Pressing the AUD button six times enables the turning knob to set the display brightness.

DIMnn Range: 01 – 16



The display consumption at 12V is between 10mA und 70mA. In addition the battery voltage in Volts is indicated.