Drake T-4XC VFO R-4C DDS Remote User Manual

Contents

Drake T-4XC VFO R-4C DDS Remote

Product Information

Specifications

- **Compatible with**: Drake Lines 4 / 4A / 4B / 4C, SPR-4, Collins KWM-2/A, Drake TR-7/A
- **RF Generator**: 100kHz to 160MHz
- **Power Output:** -56 to +12 dBm in 1 dBm steps Adaptable to other brands
- **Accessories Supplied:** Cables – CXL 50 ohms RG58 C/U RX Mute (BNC/RCA), TX Mute (BNC/RCA), INJ RX/TX (BNC/RCA)

Product Usage Instructions

Set-Up

Arrangement of the R-4C Commands

Before starting the DDS R-4C:

- Set the XTALS switch to position number 15.
- The band switch must be on the band indicated by the DDS R-4C display.
- Ensure no glass is installed in the rear base.

Arrangement of T-4XC Commands

Before starting the DDS R-4C:

- Set the XTALS switch to position number 4.
- Set the mode switch to SSB for SSB and X-AM for AM.
- Set the transceive switch to RCVR.
- The band switch must be on the band indicated by the DDS R-4C display.
- Ensure no glass is installed in the front plinth FF.

Welcome Display Screens

When starting the equipment, the following screens appear sequentially:

- The first screen always appears by default on all equipment.
- Other screens are requested by the user at ordering and can be programmed with custom text.
- The user can choose the amount of screens to appear at startup.

Indications on the Display Screen Window

The display shows:

- Current frequency (TUNED FREQUENCY HZ)
- Which VFO is being used

- Selected function
- If SPLIT or RIT is being used
- Selected band for positioning the R-4C and T-4XC band switch

(FAQ)

- Q: Can the DDS R-4C be used with other transceiver models not listed in the compatibility list?
- A: Yes, the DDS R-4C is adaptable to other brands not listed in the compatibility list. Ensure proper setup and configuration for compatibility.

IMPORTANT

- READ THIS INSTRUCTION MANUAL CAREFULLY before attempting to use the DDS VFO R-4C
- SAVE THIS INSTRUCTION MANUAL. This manual contains important safety and operating instructions for the DDS VFO R-4C

ACCESSORIES SUPPLIED

- CABLE CXL 50 OHMS RG58 C/U RX MUTE (BNC/RCA)
- CABLE CXL 50 OHMS RG58 C/U TX MUTE (BNC/RCA)
- CABLE CXL 50 OHMS RG58 C/U INJ RX/TX (BNC/RCA

SET UP

ARRANGEMENT OF THE R-4C COMMANDS
BEFORE STARTING THE DDS R-4C, SET THE “XTALS” SWITCH TO POSITION NUMBER 15 THE “BAND” SWITCH MUST ALWAYS BE ON THE BAND INDICATED BY THE DDS R-4C DISPLAY AND REMEMBER YOU SHOULD NOT HAVE ANY GLASS INSTALLED IN THE REAR BASE

ARRANGEMENT OF T-4XC COMMANDS
BEFORE STARTING THE DDS R-4C, SET THE “XTALS” SWITCH TO POSITION NUMBER 4, THE “MODE”

SWITCH TO SSB FOR SSB AND TO X-AM FOR AM, THE “TRANSCEIVE” SWITCH TO RCVR, THE “BAND” SWITCH MUST ALWAYS BE ON THE BAND INDICATED BY THE DDS R-4C DISPLAY AND REMEMBER THAT YOU MUST NOT HAVE ANY GLASS INSTALLED IN THE FRONT PLINTH FF

WELCOME DISPLAY SCREENS
WHEN STARTING THE EQUIPMENT, THE FOLLOWING SCREENS APPEAR SEQUENTIALLY:

The 1st screen always appears by default on all equipment. The other screens are requested by the user at ordering the equipment and they are programmed with the text you want. The user can also choose the amount of screens that you want to appear when starting the equipment.

INDICATIONS ON THE DISPLAY SCREEN WINDOW

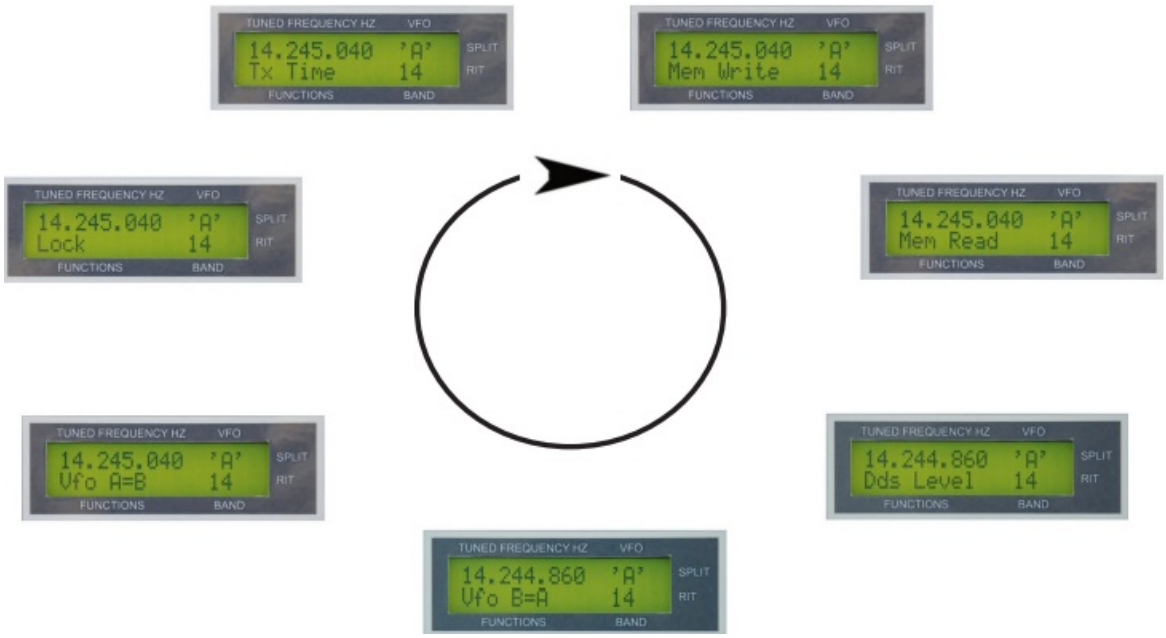
THE DISPLAY shows the current frequency (TUNED FREQUENCY HZ), which of the two VFOs is being used, the function we have selected (FUNCTIONS), if the (SPLIT) or the rit (RIT) is being used and the band (BAND) selected, to be able to correctly position the R-4C and T-4XC BAND SWITCH.

EXAMPLES:

- SPLIT and RIT are on and we need to place the BAND SWITCH of the R-4C and the T-4XC at position 14.0. The frequency shift of the RIT only affects the RX. In TX it will come out exactly at the frequency that VFO “B” is on. Will change from “A” to “B” by pressing the PTT.
- SPLIT and RIT are off and we need to place the BAND SWITCH of the R-4C and the T-4XC in position 7.0. The R-4C and T-4XC will work at the exact frequency indicated by the DISPLAY. The frequency coverage in RX is from 1.5 Mhz to 30 Mhz. Coverage in TX will be on authorized bands.
- SPLIT is on and RIT is off, you need to place the BAND SWITCH of the R-4C and the T-4XC in position 7.0. The R-4C will operate on the frequency from VFO “B” and the T-4XC to VFO “A” frequency. Remember that VFOs “A” and “B” must be on the same band but in a different frequency. By pressing the PTT VFO “B” will change to “A”.

KEYBOARD FUNCTIONS

FUN + KEY
By pressing the [FUN +] key several times, the following functions appear sequentially:



- **FUN – KEY**

  By pressing the [FUN –] key, the same functions appear sequentially but in reverse. To activate and deactivate these functions we must use the [KEY +] or [KEY -] keys.
- **KEY + KEY**

  Activates the function in the ascending direction.
- **KEY – KEY**

  Activates the function in the descending direction.
- **VFO KEY**

  Toggles between VFO “A” and VFO “B”.
- **SPL KEY**

  By pressing this button we activate or deactivate the “split” operation. Then we can receive on the frequency of one VFO and transmit on the frequency of the other VFO.
- **RIT KEY**

  With this button, we activate or deactivate the RIT operation. It is then possible to slightly change the frequency of reception with the [KEY +] and [KEY -] keys in 10 Hz steps. up to +10 Khz. or -10 Khz. We can set any frequency of RIT independently to each VFO. We can also set a certain RIT frequency for all channels of memory. Zeroing is achieved by simultaneously pressing the [KEY +] and [KEY -] keys.
- **BAND KEY**

  This key provides access to three functions: HAM BAND – STEP – TUNING.
- **HAM BAND :**

  By pressing [KEY +] or [KEY -] we can select the different bands. Pressing [KEY +] selects the band immediately higher than that shown on the display. Similarly, if you press [KEY -] the selected bandit will be immediately lower than the one shown.
- **STEP :**

  Pressing [KEY +] or [KEY -] changes the tuning step from 1 Hz., 10 Hz., 50 Hz., 100 Hz., 500 Hz.,1 KHz., 2,5 KHz., 5 KHz., 10 KHz., 100 KHz., 500 KHz., 1MHz.
- **TUNING :**

  Pressing [KEY +] or [KEY -] changes the tuning according to the selected tuning step with the previous button when the main tuning control is not in use.

FUNCTIONS OF THE DISPLAY

DDS LEVEL

Press the [FUN +] key until the Dds Level appears. The output level of the DDS is programmable from -56 dBm. up to +12 dBm. Level jumps are 1 dBm. When we use the DDS as an RF generator, the level output of the DDS is a 0 dBm. by default. Starting from this level, we can go up to +12 dBm. or down to -56 dBm. When we use the DDS as a VFO in the R-4C, the DDS output is different for each of the bands. This is set natively for each particular team. With this we get the team to have the same sensitivity to all bands. When a heavily interfered signal is received, the user can momentarily change the level of the DDS to lower the level of interfering noise. By moving the dial to change frequency, the DDS level automatically changes to default.

LOCK

Press the [FUN +] key until the Lock appears. This function locks the main tuning control. To activate and deactivate it, press the [KEY +] key.

TX TIME

Press the [FUN +] key until Tx Time appears, now press the [KEY +] key and it will appear:

Pressing [KEY +] again will output:

MEM WRITE

Recording of memories

First, we have to press the BAND button and select Ham Band, then pressing [KEY +] or [KEY -] will go appearing the different bands able to choose the one that interests us. Then with the tuning dial button, we set the frequency we want to record. Then we must press the [FUN +] key until Mem Write appears, and then pressing the [KEY +] key will show the first memory number:

and pressing [KEY +] again will output:

and so on until the 40 memories are complete. Holding down [KEY +] or [KEY -] will scan all the numbers in the memories, in ascending or descending order, being able to stop at the one we want. Once the memory number we want to record has been chosen, press the BAND key and the previous chosen frequency will be recorded. To record another memory press the SPL key and the Ham Band will come out again, having to follow the same procedure already explained, selecting first the band, then the frequency and then the number of memory we want

to record.

MEM READ
Press the [FUN +] key until “Mem Read” appears, now press the [KEY +] key and it will appear:

Pressing [KEY +] again will output:

and so on until the 40 memories are complete. Holding the [KEY +] or [KEY –] key will scan
all the numbers in the memories, in ascending or descending order, being able to stop at what we want.

VFO A = B

Copy the frequency from VFO “B” to VFO “A”. Press the [FUN +] key until Vfo A=B appears, then press the [KEY +] key

VFO B = A

Copy the frequency from VFO “A” to VFO “B”. Press the [FUN +] key until Vfo B=A appears, then press the [KEY +] key

ADVANCED FUNCTIONS

DISPLAY MODE
By pressing the [RIT] key and not letting it go we start the DDS. “Set display mode” will appear and then the “Drake R4 mode” subfunction. By then pressing the [KEY +] key we can switch to the following subfunctions, in this order:

- “Drake SPR-4 mode”
- “Drake TR7 mode”
- “Collins mode”
- “RF generator”
- “Others”

MAXIMUM FREQUENCY
By pressing the [SPL] key and without letting it go we start the DDS and “Frq max 30 MHz” or the maximum frequency that we had previously selected will come out. By then pressing the [KEY +] key we can set the maximum frequency that we wish in 10 MHz steps. up to the 160 MHz limit. This function is used only when we use the VFODDS R-4C as an “RF generator”.

DEFAULT BAND R-4C

By pressing the [FUN +] key and not letting go, we start the DDS and “DEFAULT BAND” will appear on the display. Next we have to stop the DDS and start it again. Achieving this that the frequencies of the different bands stay in the centre of the band as follows:

Positioning of the BAND switch on the R-4C and T-4XC	Ham Band
1.5	1.850.000 KHz.
3.5	3.650.000 KHz.
7.0	7.050.000 KHz.
14.0	10.120.000 KHz.
14.0	14.200.000 KHz.
21.0	18.120.000 KHz.
21.0	21.300.000 KHz.
28.5	24.900.000 KHz.
28.5	28.700.000 KHz.

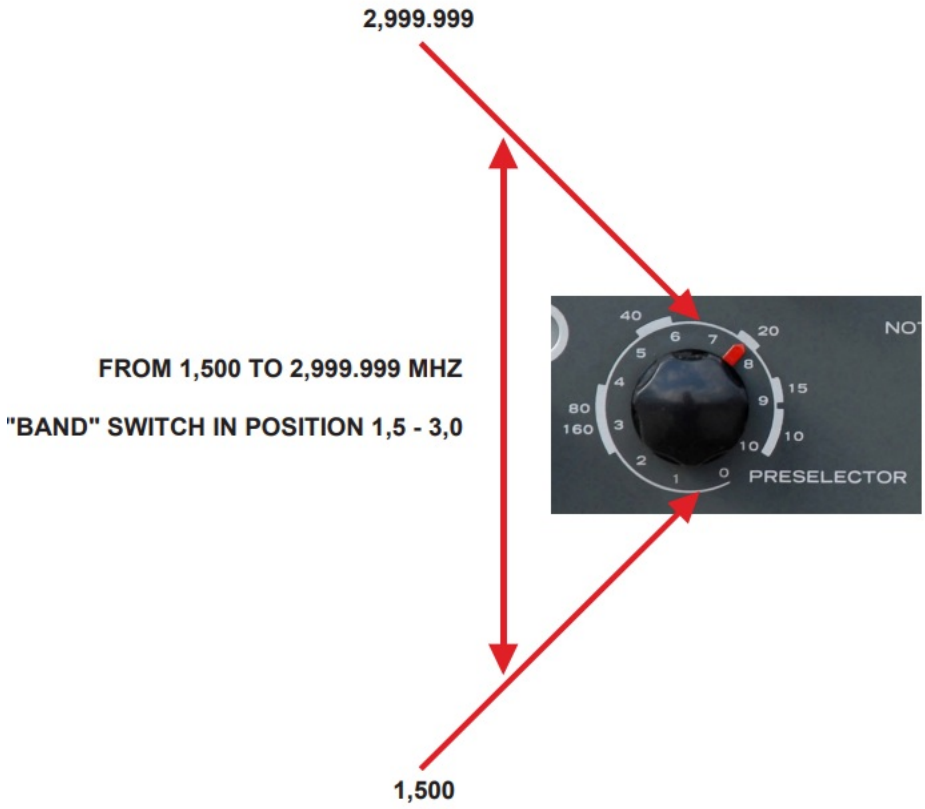
SPECIFICATIONS

GENERAL

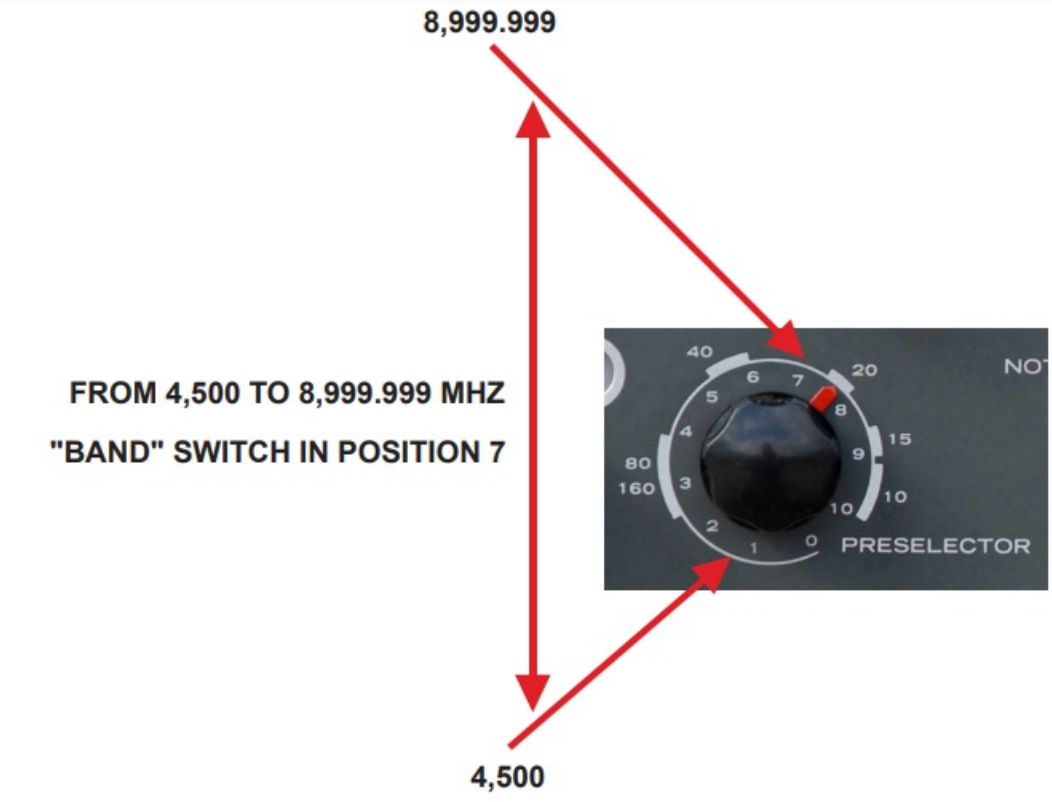
- **FREQUENCY COVERAGE AS DDS VFO FOR:**
  - R-4C 1,5 Mhz to 30 Mhz
  - T-4XC 1,8 A 1,9 Mhz / 3,5 A 4 Mhz / 7 A 7,1 Mhz / 12 A 30 Mhz
- **FREQUENCY COVERAGE AS RF GENERATOR:**
  - 0,5 Mhz to 160 Mhz
- **FREQUENCY STABILITY FROM 2 MINUTES OF STARTING UP TO 6 HOURS:**
  - + – 0,05 ppm (10ºC to 35ºC)
  - + – 0,5 ppm (- 40ºC to 85ºC)
- **TEMPERATURE, OPERATING RANGE:**
  - – 40º C to 85ºC
- **FREQUENCY RESOLUTION:**
  - 1 Hz
- **RF OUTPUT LEVEL:**
  - From – 56 dBm to +12 dBm in 1 dBm steps
- **MEMORY CHANNELS:**
  - 40 (from 0 to 39)
- **FUNCTIONS:**
  - Dds level, Lock, Tx time, Memory write, Memory read, Vfo A=B, Vfo B=A,
- **KEYBOARD:**
  - – FUN, + FUN, – KEY, + KEY, VFO, SPL, RIT, BAND
- **START SWITCH:**
  - OFF – ON (DSP1 – DSP 2 ARE OPTIONAL)
- **POWER:**
  - From 200VAC to 240VAC
- **CONSUMPTION:**
  - 0,06 A AC
- **DIMENSIONS (PROJECTIONS NOT INCLUDED):**
  - 273 X 138 X 295 mm.
- **WEIGHT:**
  - 4,35 Kg.
- **NUMBER OF CONNECTORS:**

- 3 (CXL BNC) (TX MUTE, RX MUTE, RF OUT)

POSITIONING OF THE PRESELECTOR



FOR EACH BAND AND SEGMENTS OF FREQUENCY OF THE R-4C / T-4XC WITH THE VFO DDS R-4C



4,999.999

FROM 3 TO 4,999.999 MHZ

"BAND" SWITCH IN POSITION 3,5

3

23,500

FROM 23,500 TO 30 MHZ

"BAND" SWITCH IN POSITION 28.5

30

14,500

FROM 14,500

TO 23,499.999 MHZ

23,499.999

"BAND" SWITCH IN POSITION 21

Documents / Resources

	Drake T-4XC VFO R-4C DDS Remote [pdf] User Manual T-4XC VFO R-4C DDS Remote, T-4XC, VFO R-4C DDS Remote, R-4C DDS Remote, DDS Remote, Remote

References

- User Manual