

TK-705/805 technical introduction and supplement

The TK-705 and TK-805 utilize a self contained programmer. Unless Kenwood has programmed the unit for you at the factory, these units are shipped in the "program mode". In the program mode, the radio will not transmit or receive (no receive audio). Before the radio will transmit or receive it must be programmed according to the following pages. It also must have the "user" mode selected. Inside the radio, just to the left behind the display, is a jumper labelled CN7. This is a 3 pin plug with a shorting plug placed across two of the pins. With the front of the radio toward you, when the shorting plug is placed across the center and left most pin, the radio is in programming, memory clear and clone mode. When the shorting plug is placed on the center and right most pin, the radio is in user mode.

Condensed programming information

In the program mode the channel selector is used to select frequencies and QT (CTCSS) tones. Holding the squelch switch while rotating the channel selector changes the frequency in 1 MHz steps.

PTT enters the displayed information into memory and steps to the next setting. With the power switch off, holding the squelch switch while turning power on will provide temporary TX/RX for testing purposes (without selecting user mode). Turning the power switch on while pressing the monitor (speaker symbol) switch CLEARS ALL MEMORY.

Programming errata

In the user mode, the display will skip unprogrammed channels.

During programming a channel location which displays only dashes (---.----) has not been programmed. The hundreds digit, in a 12.5kc (TK805) or 6.25kc (optional in TK705) channel step will not be displayed. A hundreds digit will be indicated by a dot, '.' after the last digit of the frequency display.

If an optional PLL channel step is to be used (Manual page 5), the radio must be changed accordingly prior to programming.

CH 1 cannot be deleted. Once channel are programmed, they cannot be deleted unless memory is cleared (see above) and all but the undesired channel(s) are reprogrammed.

Tone programming "OFF" indicates that tone is disabled either encode or decode). When "OFF" is displayed, rotating the channel selector will allow selection of the desired tone.

When all desired tone and frequency entries are completed continue pressing PTT to step across the unprogrammed channels until end is displayed. If any undesired channels were displayed prior to "END", the memory must be cleared and reprogrammed.

The TK705/805 Tuning manual references function I and function II. Function I refers to the program mode and Function II refers to the USER mode.

The TK705/805 in its basic form (when ordered unprogrammed) is shipped with both the Time Out timer and Busy Channel lockout disabled. Plug-in jumpers are

used to select the desired function for these features.
Time out timer selects length of transmission before transmitter will automatically unkey. Time out timer selection jumpers

JUMPER	OFF	30 sec	60 sec	90 sec
CN6		>	>	"refers to jumpers on right most two pins and"

Selection of programming/user mode.

JUMPER	Program	User
CN7		

On TK805, frequency step size is selected by soldering chip jumpers on the TX/RX unit (B/2) board foil side.

R207 installed and R208 removed equals 10kc steps, R207 and R208 removed equals 12.5kc steps.

SAMPLE PROGRAMMING - SET CN7 to PROGRAMMING POSITION () and turn radio on to operate. Display will now show channel numbers.

When programming, if a mistake is made, or it is decided to change or check a setting on a previous channel, rotate the channel selector knob while holding down the Monitor (speaker symbol) button to go forward or backward in the settings. Release the Monitor button and data can be changed by rotating the channel selector knob as usual. PTT and Squelch buttons operate as before.

Beginning with SN 41200000, several new programming features were included in these models. These new features include a programmable Monitor Switch function, OFF-HOOK Scanning, OFF-HOOK decode, Transmit Revert Channel (for off-hook scanning), and an additional Scan Resume Delay (for the transmit revert channel). This Service Bulletin is revised to include the programming procedure for these new features in the self-programming mode.

Entering the self programming mode is accomplished by turning on the power switch while pressing a combination of buttons which act as an interlock. Jumper CN-8 located on the main board behind the display is in the SET position when the radio is shipped from the factory. This enables self programming. If CN-8 is moved to the USE position, which is recommended prior to delivering the radio to the customer, the self programming mode cannot be entered. (The radio may be operated with the jumper in the set mode, but after exiting programming mode it will revert back to displaying channel numbers, not frequencies.)

Prior to initial programming, you may want to perform a Memory Clear. With CN8 in the set mode: SIMULTANEOUSLY press and hold the AUX and SCAN and D/A while turning the power switch ON. This will remove any frequencies which were factory installed for testing purposes. The radio automatically enters the Option setting mode during memory clear.

To enter the Option Setting Mode without clearing memory, SIMULTANEOUSLY press and hold AUX and SCAN buttons while turning power ON (CN-8 on the main board must be in the set position).

OPTION SETTING MODE

(Pressing PTT between all functions stores the data and changes to next function)

Function	Display	Rotate channel selector to select	Press
1 Band range	150.000~	100Mhz SECTION (150-450)	PTT
2 Time out timer	t OFF	Off-30-60-90-120-180 Sec (default=off)	PTT
3 Busy ch lockout	b On	Off/on (default = on) no TX when channel is busy	PTT
4 DEL/ADD condition	dA On	On=user select, off=fixed see RX ch & DEL/ADD	PTT
5 Mic hook operation	H On	On=scan on hook, PTT off hook, mon off hook, Off=no scan, ptt on or off hook, no off hook monitor	PTT
6 Priority channel	P FI	FI=FIXED US=user selectable (default=fixed)	PTT
Additional features from sn 41200000			
7 Monitor switch	En On	On=press to disable decode, hold to disable Sq. Off=press to disable Squelch (default =on)	PTT
8 Off hook monitor	dE Off	On= no off hook monitor, off=monitor off hook	PTT
9 Off hook scan	sc Off	On= off hook scan, off=scan on hook only	PTT
10 END	END	(turn off power)	

RECOMMENDATIONS for NEW FEATURE SELECTIONS.

- Off Hook Monitor (dE OFF) is only enabled when On-Hook Scan is selected (SC=OFF)
- The "Last Called" option in the revert channel selection is supported in units bearing SN of 50700000 and higher only. Prior to this S/N, the "Last Called" revert feature operated according to specifications outlined for certain export models only.
- The Revert channel during On-Hook scanning is the Priority channel only. The revert channel and Resume B selection is skipped during self programming when On Hook scanning is selected.

In the user mode, the display skips unprogrammed channels. During programming mode any mistakes in programming can be reprogrammed over but channels cannot be deleted once entered unless memory is cleared, and all desired information reprogrammed. When all desired tone and frequency entries are completed, continue pressing PTT (stepping across unprogrammed channels) until END is displayed. If any undesired channels were displayed prior to END, the memory must be cleared and reprogrammed. (memories may be cleared individually when using the KPG-6D programming software by hitting all spaces).

FREQUENCY PROGRAMMING MODE

TK-705D AND TK-805D FREQUENCY, AUXILIARY & SCAN Programming

To enter the frequency programming mode, SIMULTANEOUSLY press and hold the "AUX and "D/A buttons while turning power "ON" (CN-8 on the main board must be in the SET position)

CH1 - RX FREQ

Set ch1 RX freq by turning channel selector, hold AUX key when turning to change 1mhz

Press SCAN to change channel step from 10 and 12.5kc UHF or 5 and 6.25kc VHF

Press D/A key to enable delete/add scan function for this channel

Press REC to enable AUX switch function on this channel (selected later)
PTT

RX TONE TYPE

Use ch selector to set RX tone type, QT (tone) or DQT (digital) DQT only on D model PTT

RX TONE FREQ

Display reads St for tone or S dt for digital

Set receive tone or digital with ch selector=.1hz, Ch sel+AUX for 1's digit, REC for 10's digit on tone. For digital, ch selector = 1's, AUX +ch sel = 10's, REC+ch sel = 100's, SCAN=normal/ inverse (note that non-standard tones can be selected for both tone or digital) PTT

TX FREQUENCY

Note: when TX settings are being programmed the TX symbol (--^) will be displayed

Use ch selector to set TX freq (or press PTT to set no tx (RX only channel), Ch sel+AUX=1mhz

Use SCAN button to set step size (see above, same as RX) PTT

TX TONE TYPE

Set TX tone type (see above)

TX TONE FREQ

Set tone freq (see above) PTT

-----> Repeat the above for CH2 to CH16 (bypass any channel by pressing PTT on blank "----.----" channel.)

AFTER CHANNEL 16, PROGRAMMING ENTERS OPTION SELECT MENU (use Channel Sel to select option) AUX Set AUX button function, DRS=digital recording (must have option board), 2tonE= two tone sequential decode, dt=DTMF, tA= talkaround. Only one AUX condition can be set for all channels, however it can be turned on or off for specific channels in operation mode. PTT

RESUME A TIME

Set resume scanning delay time after receiving call in .5 second steps, PTT

RESUME B TIME

Set delay before scanning resumes after transmitting (in off hook scan mode) 0.5 sec, PTT

FIXED PRI CH

If option setting for priority is set at FI, fixed priority, select ch number, if set at US (user selectable) this will be skipped during programming, PTT

LOOKBACK A TIME

This sets the time between samples when looking back at the priority channel PTT

LOOKBACK B TIME

This sets the time between samples when looking back at the priority channel when the priority channel is busy but the signal does not have the PL tone you have programmed into the priority channel. PTT

REVERT CH (only enabled during off hook scan)

Use ch sel to set the channel the transmitter will revert to when PTT is pressed during off hook scan.

St = last channel selected before the scan switch was pressed

P CH = priority channel

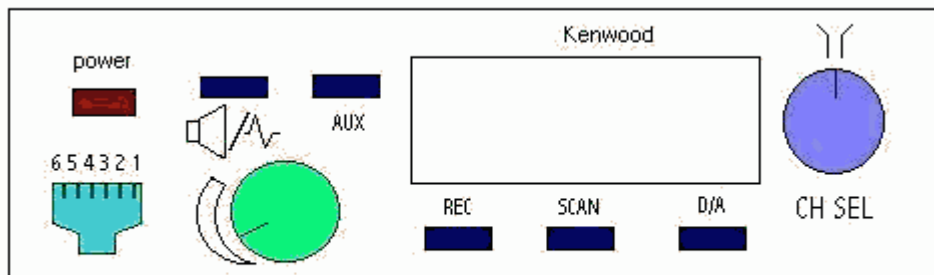
CA CH = last channel a call was received on

US CH = last channel used (that was transmitted on) before scan switch was pressed PTT/ END

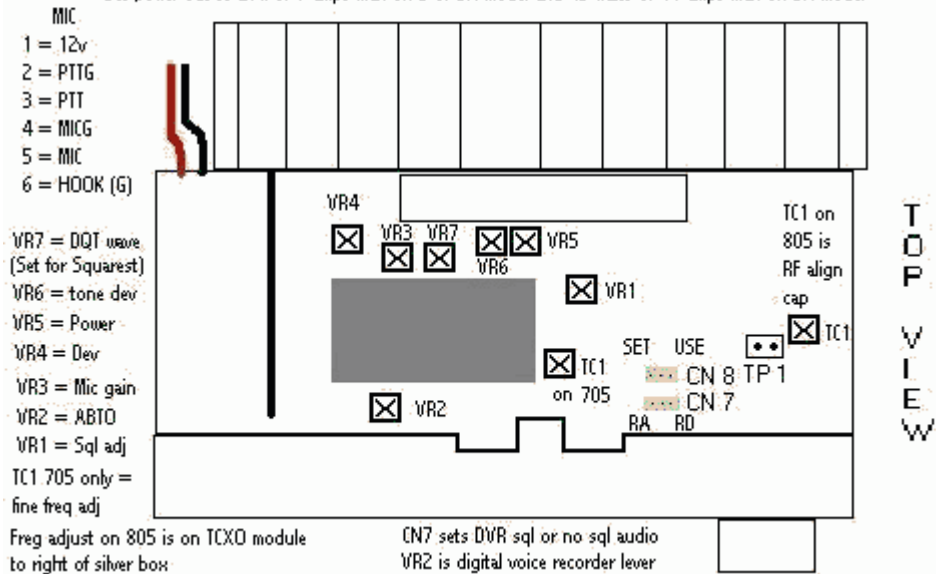
In programming mode pressing the MON (SPKR symbol) button and turning the channel selector knob will take you back or forward in the menu selections in case you make a mistake or decide to make changes to previous settings while programming. In operation mode, to add/delete channels for scanning, press scan and add/delete button.

Adjustment pots on the TK705D/805D, facing front of radio, left to right, back row.

Kenwood 705D 805D



Set power out to 27w or 7 amps max on D or DN model and 45 watts or 11 amps max on DH model



VR4=max deviation set, VR3=Mic sensitivity set, VR7=dig waveform bal (set for squarest digital waveform as seen at output frequency on service monitor), VR6=PL tone level (500 to 750 ~), VR5=power out (set to 27W) right side of silver VCO box VR1=presel squelch level, VR2=ABTO (this is the level control when using the digital audio recording option board).

TC1= frequency (TCXO) adjustment (NOTE: THIS IS ONLY ON THE 705D, THE 805D FREQUENCY ADJUSTMENT IS LOCATED ON THE TCXO MODULE WHICH IS TO THE RIGHT OF THE SILVER VCO BOX TC1 on the 805 is a RF stage alignment cap...)

RA/RD jumper (CN7).

This is for use when using the radio with the digital recording option. RA position is for audio that follows the squelched audio. RD position is for unsquelched audio, (noise and audio).