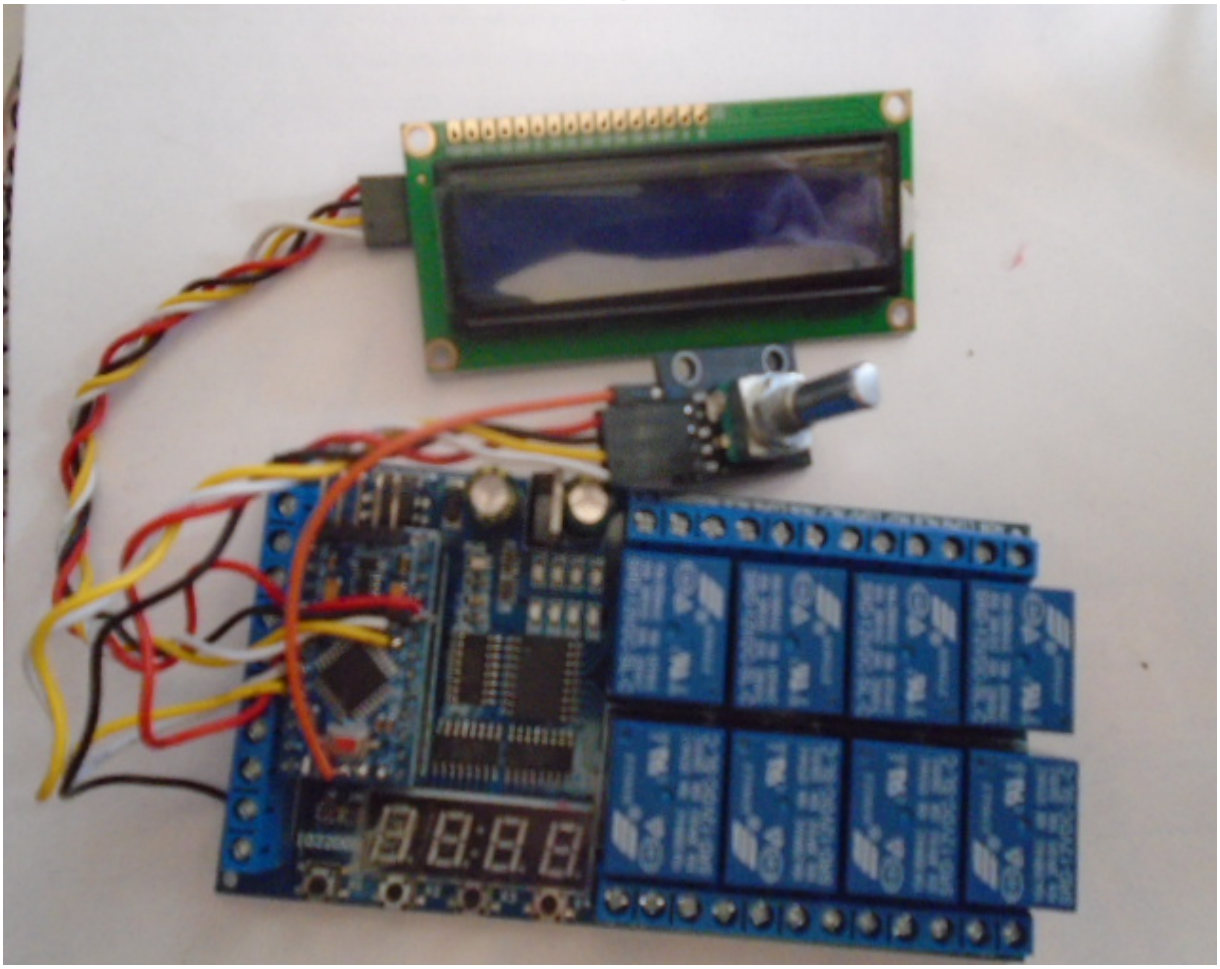
I-SEQ KIT



i-SEQ Kit is an intelligent sequencer for the ICOM IC9700 transceiver with relay outputs that allows you to activate / deactivate reception and transmission preamps sequentially by acting on the chosen band and in which it transmits through the C-IV port of the transceiver or either through an external PTT. You don't need a PC to set it up, it's an inexpensive sequencing system. The software is upgradeable, so you can update the program yourself.
The software has been developed to be as user-friendly as possible. It has a menu to configure it according to the needs of the user, in the functions available.

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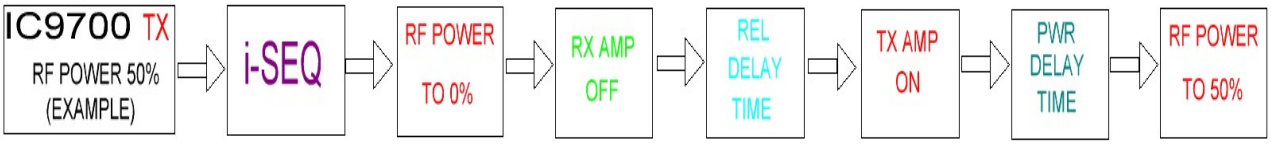
Characteristics

Allows preamp control for 144, 432, and 1296.
Allows amp control for 144, 432, and 1296.
Control by C-IV.
Control by External PTT or PTT C-IV.
Allows Satellite mode.
Allows baud rate change.
Allows change of Hexadecimal address.
Allows time change for relays.
TX / RX control detected on the transceiver.
Upgradeable software.
Configuration without PC.
2X16 LCD screen to display status and options menu.
Rotary encoder for configuration options.
New free versions once the first license is obtained.
PTT input with optocoupler.
13.8V DC power supply
Relay with 10 A contacts.
Etc.



i_SEQ V1.5

Kit Contents:

Printed circuit board containing:

Relays
Arduino microprocessor, with recorded program.
Converter for C-IV.
Optocoupler inputs for External PTT.

1602 LCD screen Blue color with I2C adapter.
Rotary Encoder.
RCA Female chassis connectors. (7 Units)
Jack 3.5 mm Female chassis connector.
TTL-USB converter with cable for Arduino for updates.

Kit connection:

Printed circuit board:

Feeding:

VIN: Connect positive to power the + 13.8V circuit.
GND: Connect negative to power the circuit.

External PTT:

IN1: Connect pedal, etc. PTT. I-SEQ will activate when it is GND in PTT Mode.

Relays:

Relays 7 and 8 have no use.

COMx,NOx: Relays 1, 2 and 3 correspond to the switching of the receive preamps. The one corresponds to 144 Mhz. The two at 432Mhz and the three at 1296Mhz. The common of the relay is marked COMx, where x is the relay number. When activated, it closes the circuit with NOx. At rest it closes the circuit with NCx. Relays 4,5 and 6 correspond to the switching of the transmission amplifiers. The four corresponds to 144 Mhz. The five at 432Mhz and the six at 1296Mhz. The common of the relay is marked COMx, where x is the relay number. When activated, it closes the circuit with NOx. At rest it closes the circuit with Ncx.

Rotary Encoder:

IN2: It corresponds to the SW pin of the encoder, although it is already connected to the Encoder's printed circuit.

Inputs IN3 to IN8 have no function.

C-IV: The cable with live and shield must be soldered to the Jack 3.5 mm Female connector to its corresponding pins.

LCD screen:

On the back of the screen is the potentiometer that regulates the screen light.

Software update:

In order to save the software on Arduino, you must use additional software capable of saving the file in hexadecimal (.HEX) format called Xloader.

XLOADER, you can download it on my website www.ea7hg.com

The operation is very simple and intuitive. First select the type of Arduino to use and select the COM port: to which your Arduino is connected. Select the i-SEQ.HEX file and press Upload.

The connection of the recorder with the Arduino is as follows:

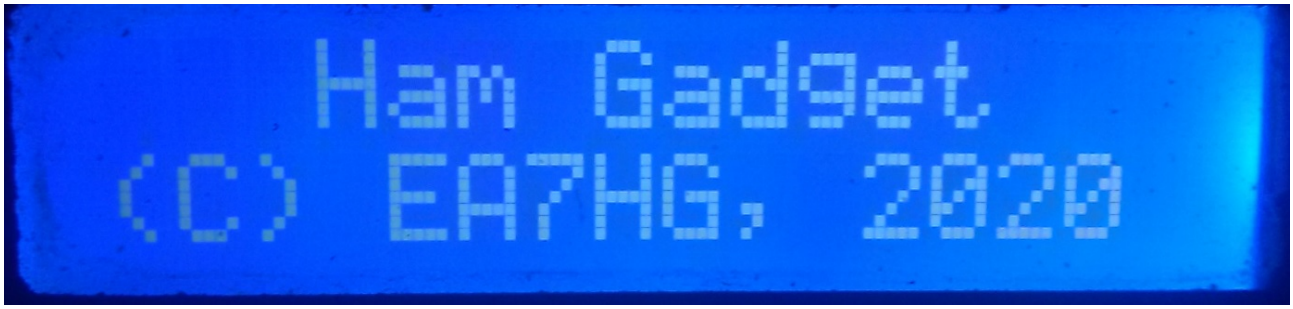
VERY IMPORTANT

I-SEQ Kit software is not compatible with i-SEQ software, so do not load the wrong software.

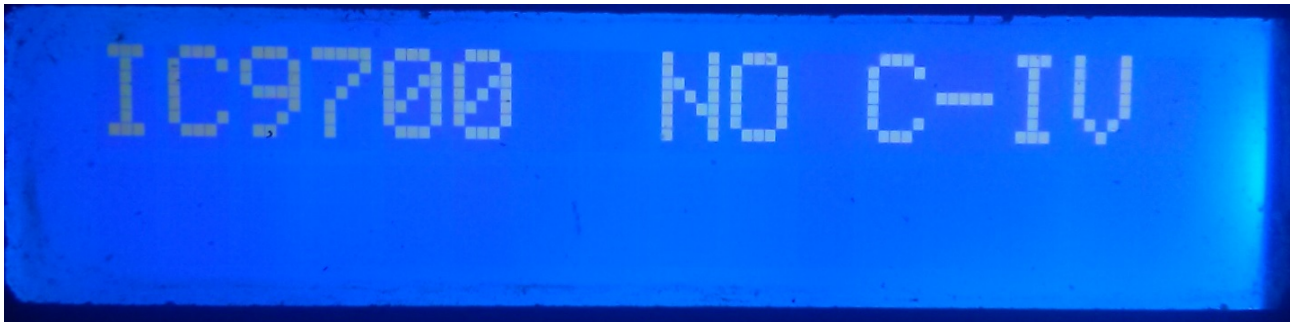
I-SEQ START:

Once i-SEQ is turned on, the screen will first show us the welcome with its callsign and version.

and a couple of seconds later the author of i-SEQ.

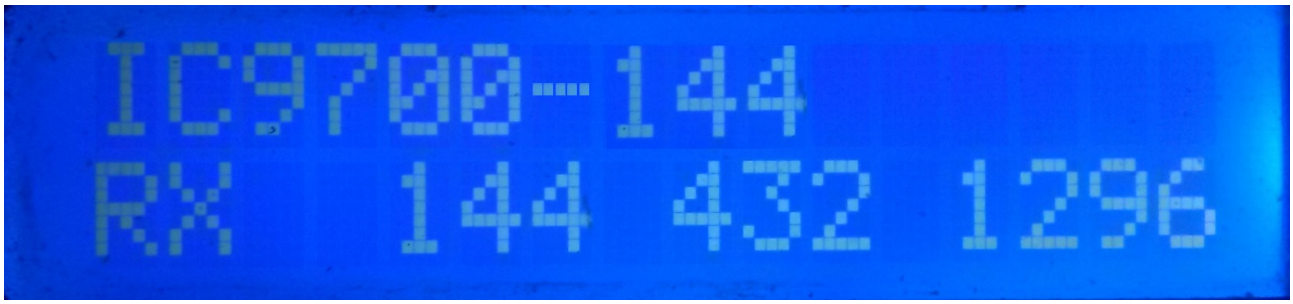


After the presentation is finished, the screen shows the following information at the start of i-SEQ in case it is not connected to the transceiver.



The default i-SEQ configuration is 19200 Baud, A2 hexadecimal address and 20 ms delay for activation of the transmission amplifiers and Auto mode. Once the configuration is changed, i-SEQ will start as configured.

I-SEQ SCREEN IN RX MODE:



If i-SEQ has communication with the transceiver through the C-IV port, it will show us in the upper line of the screen in the transceiver model and the band read as well as if it is in Automatic mode or by External PTT. In the bottom line of the screen, it will indicate that the transceiver is in reception and the outputs for the 144,432 and 1296 Mhz preamps are activated. In the event that it does not receive the correct band, IC9700-OUT will be displayed on the screen.

In case you are in Satellite mode on your transceiver the screen will show IC9700-SAT

I-SEQ SCREEN IN TX MODE:

In the upper line of the screen it will show us the model of the transceiver. Following this, it will indicate that the transceiver is transmitting in the band it indicates and therefore has activated the relay output of the amplifier corresponding to that band. In the bottom line of the screen, it will indicate that the outputs for the preamps are active for the indicated bands.

Example of this screen:

In the upper line it indicates that the transceiver is transmitting in the 144Mhz band and that it has activated the relay output for the 144Mhz amplifier. The bottom line indicates that only the outputs for the 432 and 1296 Mhz preamplifiers are activated and therefore the 144 Mhz preamplifier output is deactivated, that is, the preamplifier is disconnected.

I-SEQ MENU:

To access the I-SEQ Menu it is only necessary to press the encoder It will be shown in the first line Menu and in the second line it will appear "<<".

By indicating the second line "<<", if we press the encoder, we will exit the Menu, returning again to the i-SEQ screen.

If we turn the encoder, the different i-SEQ configuration options will appear, which are the following:

- BAUD
- HEX
- REL
- MODE RX AMP
- PTT
- PWR DELAY
- <<

To access any of the options, just press the encoder on the desired option.

MENU : BAUD:

Allows you to select the communication speed between the IC9700 and i-SEQ transceiver. Turning the encoder will allow us to change the baud rate. To record the desired value, just press the encoder. The allowed values are: 4800,9600,19200 and 38400.

MENU : HEX:

Allows you to select the Hexadecimal address assigned to the IC9700 transceiver. It will allow us turning the encoder to change the Hexadecimal address. To record the desired value, just press the encoder. Allowed values are: 00h to FFh.

MENU : REL:

It allows selecting the waiting time to activate the relay for the transmission amplifier as well as the return to reception. Turning the encoder will allow us to change the time in milliseconds. To record the desired value, just press the encoder. Allowed values are: 0 to 255ms.

MENU : MODE RX AMP:

It allows you to select if it only turns off the relay of the reception preamplifier of the band in which it is transmitted or all the relays of the reception preamplifiers. Turning the encoder will allow us to change the off mode. To record the desired value, just press the encoder.

MENU : PTT

Allows you to enable an external PTT, such as a pedal. This PTT does not refer to the Icom ACC connector pin, which is not used by i-Seq or which works automatically. In the case of enabling the external PTT, the text EXT will appear on the screen. If it is in automatic it will show Auto, it will allow us turning the encoder to change the off mode. To record the desired value, just press the encoder.

MENU: PWR DELAY:

Allows you to select the waiting time for the power to activate once the transmission amplifier relay has been activated. It will allow us to change the time in milliseconds by turning the encoder. To record the desired value, simply press the encoder. The allowed values are: 0 to 255 ms.

RESET DE i-SEQ :

In the event of a malfunction or to configure the i-SEQ default parameters, you can perform a memory reset.

To perform the RESET, you must turn off i-SEQ. Once turned off, press the encoder and without releasing it turn on i-SEQ. Once RESET appears on the display, release the encoder and i-SEQ will restart with the default parameters.

I-SEQ default parameter table:

Parameter	**Value**
Bauds	19200
Hexadecimal Address	A2
Time Relay Amplifiers	20 ms
RX Amp mode.	Normal
PTT	Auto
PWR DELAY	20ms

CONFIGURATION ON IC9700 :

To use i-SEQ with the IC9700 we must configure the IC9700 as follows:

We enter the **Menu> Connectors> C-IV** and the configuration will be as follows:

C-IV Baud Rate = The same speed that we have we must configure it in i-SEQ.
C-IV Address = The same address that we have we must configure it in i-SEQ.
C-IV Transceive = ON.
C-IV USB-REMOTE Transceive Addres = 00h.
C-IV USB Port = Unlink from [REMOTE].
C-IV USB Echo Back = ON.

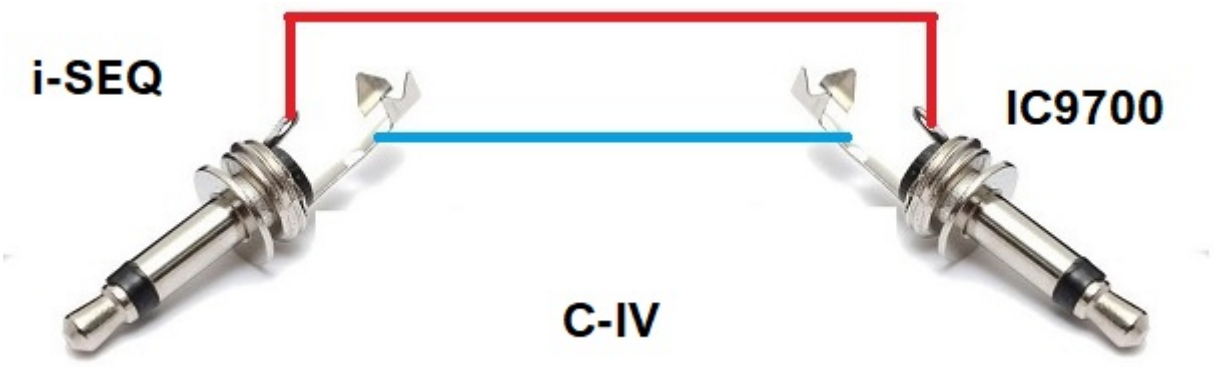
We leave the **Menu** and enter the **Menu** again.

We will select **SET> FUNCTION> TX DELAY** and select the maximum time for each band.

We leave the **Menu.**

This way you can use i-SEQ through C-IV, even if you are using WSJT through the USB port for example.

Connection between i-SEQ and ICOM IC9700 (Not included in the kit)



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