Radioamateur Voice Keyer with two microcontrolors a Isd-2590 and the choice of one of these 3 PIC's : 16F84A, 16F628A ou 16F648A

Note : The ISD-2590 is getting rare... Winbond dont make them no more...

I'd like to offer many thanks to André VE2FAB who wrote this Pic program and drew the schematics.

This project, the Voice Keyer or voice repeater is controlled by a microcontroler the Pic; it records your voice in a ISD and sends it back on the air as a message. For this project I used the ISD-2590 microcontrolor which can record up to 90 seconds. The ISD-2560, 2575 and 25120 (60, 75 and 120 seconds) are also available.

During a H.F. contest it is often necessary to repeat the same information for example "CQ CQ CQ contest de VE2HLS". The Pic 16F84A gives you the possibility to record 1, 2 or 3 different messages for a total of 90 seconds. The messages lengths can be adjusted to your needs.

Operating the Voice Keyer :

Recording mode :

Place the play/record switch in record mode. Push the PTT of your microphone and record message #1, release the PTT, push the PTT again and record message #2. Same sequence for #3. After the third message the green Led will flash, press the PTT and it will stop. If you don't like one of your messages, you'll have to start over and record them again. Never forget the 90 seconds limit of the ISD-2590.

Sending a message:

Slide the play/record switch to play mode. Push button #1 and this message will be aired. Same sequence for #2 and #3.

Message #1 repeat mode :

You have the option of two delay modes for message #1
With the play/record switch in play mode;
First for around a two second delay, press button #1 and button #2
Second delay around 4 seconds, press button #1 and button #3

To exit the repeat mode press the PTT.

Note : In the repeat mode both Led's go on.

Schematic

Note:
There is two ways to supply power to the Voice Keyer, from a 12 volts power supply or from your radio. Most of the older radio will supply 8 volts but on some new equipments you can get the 5 volts supply, if your radio has that new option, it is possible to remove the 78L05 voltage regulator from the circuit.

Parts list :

J1 - J2 = 1/8" mono Jack
J3 - J4 = Connector 8 pins
U1 = Pic 16F84A
U2 = ISD 2560 to 2590
U3 = 78L05
Msg # 1 # 2 # 3 = Push button
Play/record = Slide Switch
Q1 = 2N2222
R1 – R7 – R14 – R15 – R16 - R17 - R18 - R19 = 10K
R2 = Pot 5K
R3 = 1K
R4 = 4.7K
R5 = 470K
R6 – R21 = 1K
R8 - R9 = 300 ohms
R11 = 18K
R20 = 6.8K
C1 - C3 - C4 - C6 - C7 - C9 - C11 - C14 = 100nF
C2 = 22uF 10v
C5 = 22pF
C8 - C12 - C13 - C16 - C17 = 1nF
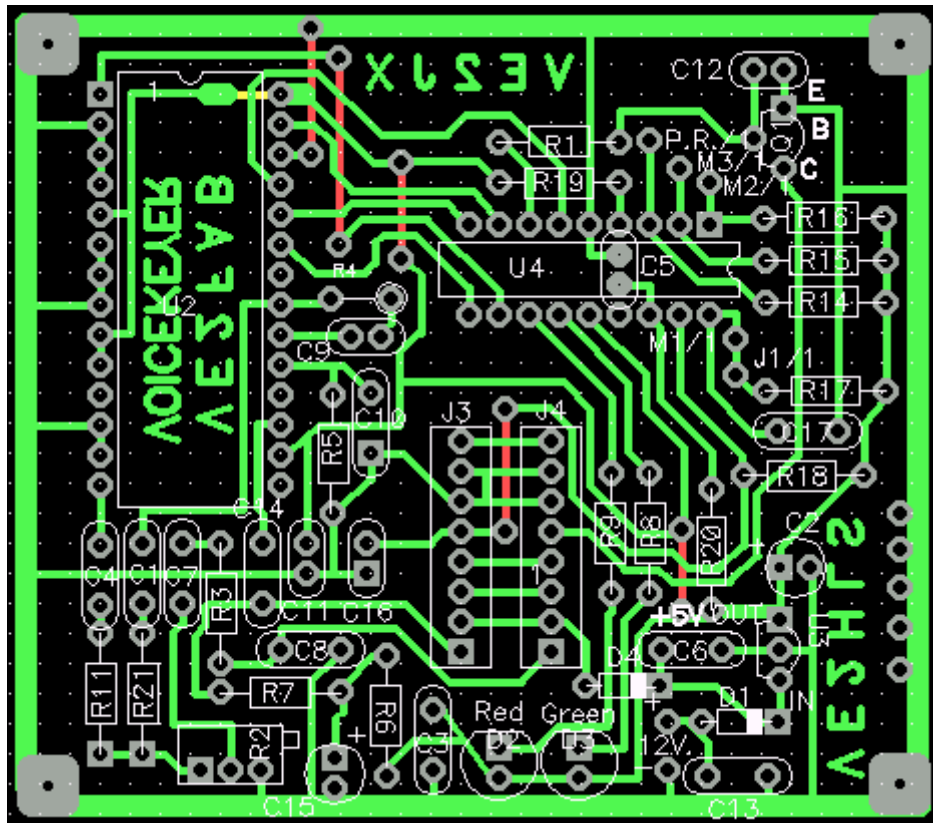C10 = 4.7 uF 10V
C15= 220 uF 10V
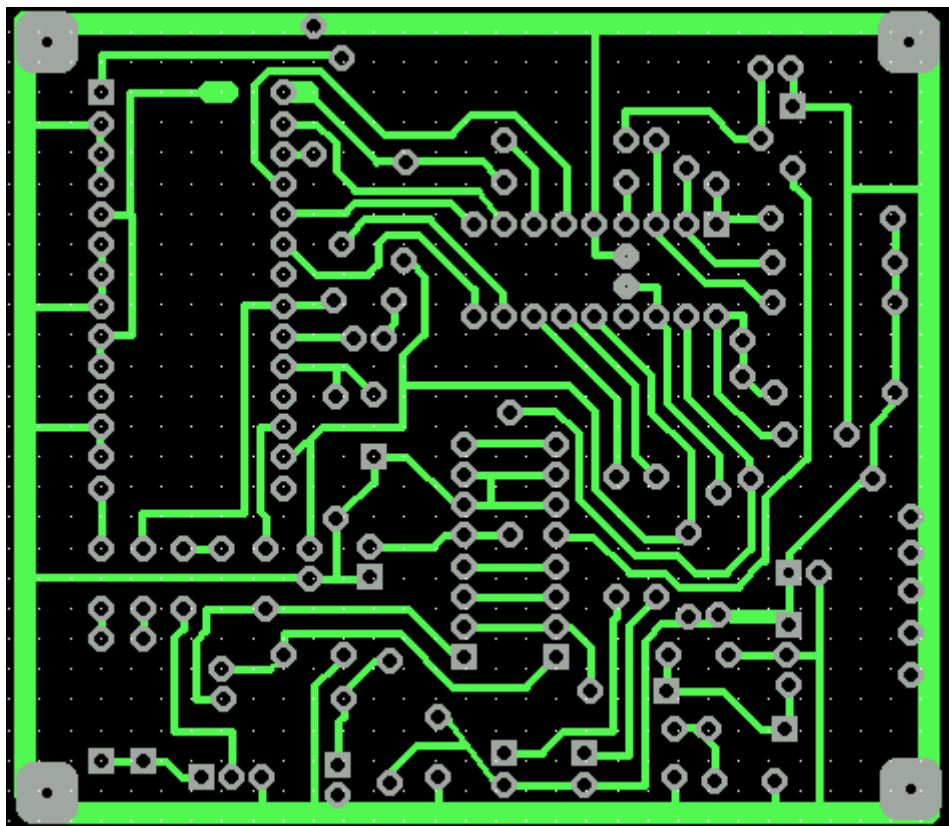D1 - D4 = 1N4001
D2 = Red Led
D3 = Green Led

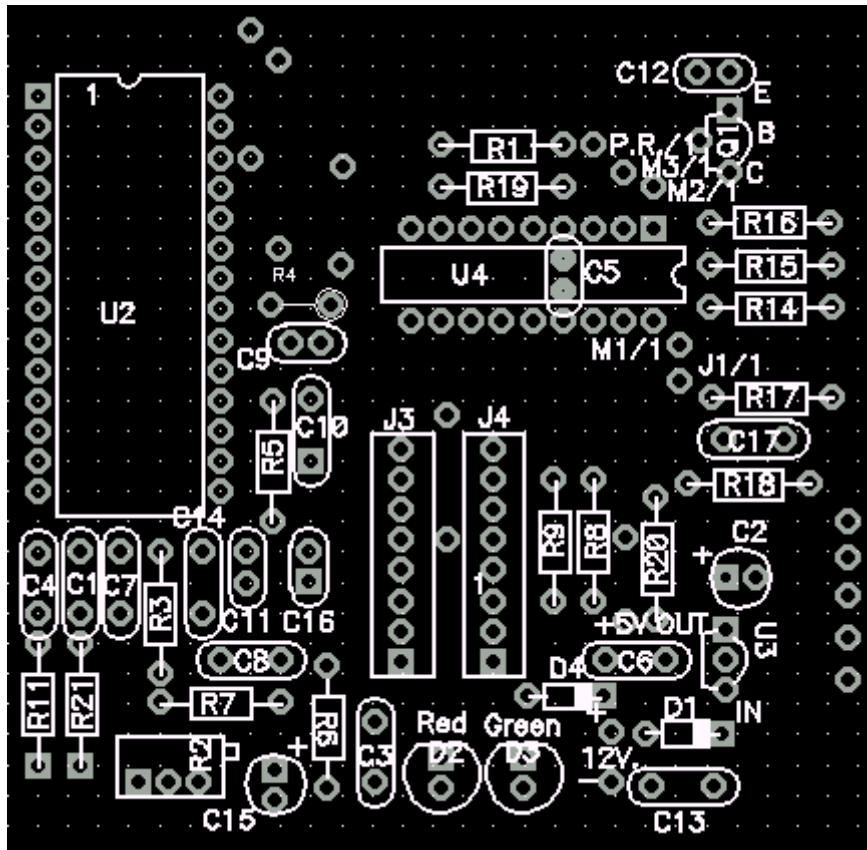The Pcb drawing is finished, ready for the plotter.

The drawing of the PC Board with Tango was made by François VE2JX.

Pcboard top and bottom

Pcboard bottom view

Pcboard top view

If such a project interests you, the program in format HEX for one of these type of Pic is available on request : 16F84A, 16F628A or 16F648A