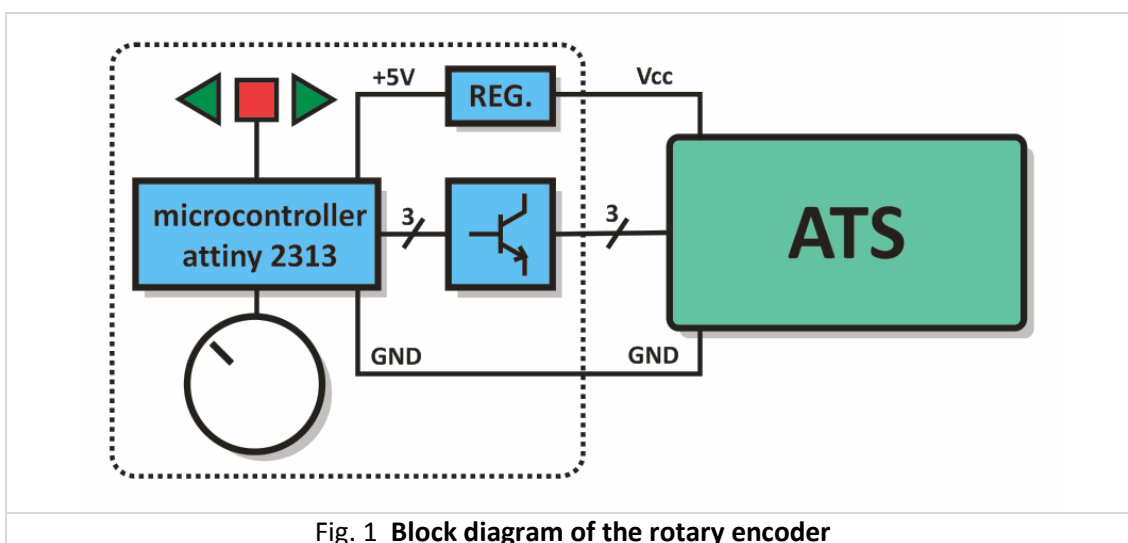


Rotary encoder for ATS series transceivers – operation manual

This equipment is dedicated for an easier control of the popular mini-transceiver AT Sprint known by ham radio operators as ATS (series ATS-2, ATS-3, A, B, B.1 compatible). Originally the ATS has just four push buttons on the top cover and in combination with the paddle it is possible to send all commands to ATS including the tuning, scanning etc. After connecting the rotary encoder accessory module an easy tune, scan and other functions are available as same as on the big size desktop transceivers. Comfort and operation is much higher even with this mini transceiver.

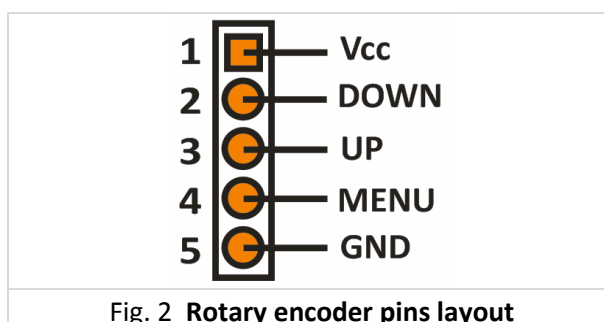


Additional rotary encoder consisting the main blocks as follows: microcontroller, encoder unit with knob, LED indicators, transistor switching circuit and connector for connection with ATS.



For correct functionality of the rotary encoder module is necessary to connect five wires as follows:

- 1) connect the GND of the ATS to the GND of the rotary encoder
- 2) connect Vcc voltage from ATS board to rotary encoder board
- 3) connect the push buttons MENU, UP and DOWN on the ATS board to the rotary encoder board



The five wires cable is used for interconnection between ATS and rotary encoder module. Because of this technology it is possible to easily disconnect encoder and use ATS alone as originally designed. On the ATS side the wires are soldered to push buttons pins, power supply and GND pins (see Fig. 3)

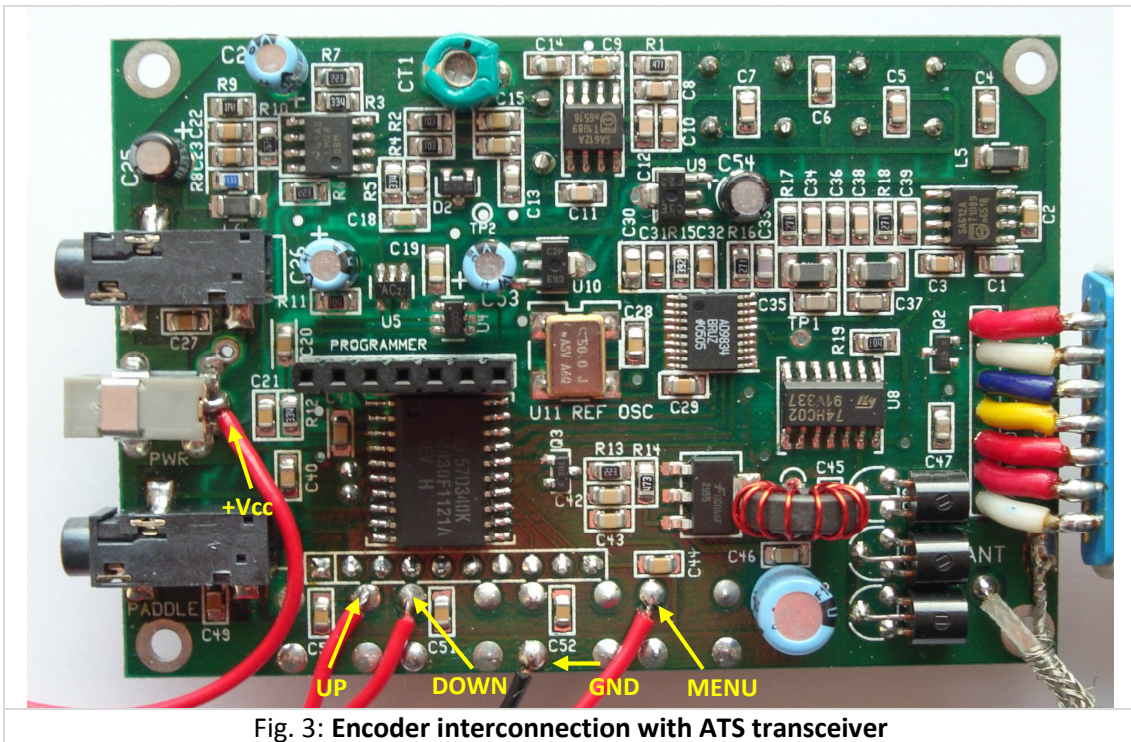


Fig. 3: Encoder interconnection with ATS transceiver

The heart of the rotary encoder module is microcontroller Atmel ATtiny2313. The firmware in the microcontroller is watching the turning or pushing of the main tuning knob on the encoder module. This information is converted as the push of one of the buttons on ATS according to the table as follows:

Rotation 1 step to the left	◀ ◻ ▶	simulates pushing the button DOWN (tune down)
Rotation 1 step to the right	◀ ◻ ▶	simulates pushing the button UP (tune up)
Pushing the tuning knob once	◀ ◻ ▶	simulates pushing the button MENU once (frequency reading)
Pushing the tuning knob long time	◀ ◻ ▶	simulates pushing the button MENU long time (go to MENU)
Double click to the tuning knob	◀ ◻ ▶	“tuning” mode is activated which is indicated by the both green LEDs flashing. Encoder is waiting at this moment for the direction where to go to tune the transceiver. It can be done by simply rotation right/up or left/down of the main tuning knob. After setting the directions as mentioned the encoder simulates holding the push button up/down on the ATS to tune thru the band without necessity to hold any button or knobs! We are talking about the automatic scanning thru the band. Which direction has been selected is indicated by the corresponding green LED flashing. To stop the tuning thru the band just press or rotate the tuning knob in any direction.