Manual for the
User Interface
for the T7F

Holger Eckardt
DF2FQ
Kirchstockacherstr. 33
D-85662 Hohenbrunn

4699HE

Circuit description

Fig. 1 shows the schematic diagram. The module includes a two-line LC-display and a rotary resolver with integrated push button switch. Depending on the rotation direction the micro-controller on the T7F board translates the pulses from the resolver into frequency up or down information. The mode (duplex, simplex, reverse) is selected with the push button. The switch S2 in the schematics has no function and is provided for future extensions. It is not part of the kit.

Construction

The PCB has traces only on one side nevertheless components are mounted from front and rear side. Therefore you can see two place plans fig. 2 (component side) and 3 (solder side). At first mount all components from fig. 2. Then stuck pin header X102 from the component side through the holes so that the plastic part remains on the component side and solder it. Next mount the resolver on the solder side.

On the rear side of the LCD you find two small pads which must be connected by a drop of solder before you mount the display. After that was done put the LCD on the pins of X102 and P1 and solder it from the top. The holes of the LCD are plated trough, so soldering is no problem.

The assembled unit can be attached on the two pin heads X1 and X2 of the T7F. Since you cannot access the modem connector X1 of the transceiver all pins are leaded through the board one-to-one to X104. Pin 1 is on the left of the lower row. The contrast of the display is adjusted with R101. Normally it stays close to the fully counter clockwise position.

Before you can use the device you must exchange the PIC (IC1) of the T7F with the new chip that is enclosed with the kit. At older version of the T7F the resistor R42 has a value of 100k. If so it must be replaced by a 10k resistor.

Operation

If you turn the knob to the right the frequency counts up, to the left it counts down. The channel spacing 12.5kHz. The upper line shoes the current frequency on the lower line you see the mode.

There are three modes, simplex, duplex and reverse which can be changed by pressing on the knob. Each time you press it proceeds cyclic to the next. In simplex mode RX and TX frequencies are the same, duplex means that the RX frequency has a positive offset from the TX. In reverse mode the offset is negative. A fourth position is used to adjust the frequency offset. 0 to 9.9875MHz in 12.5kHz steps is possible.

All settings are saved when switching off the transceiver.

Technical support

For help on building up or operation please send an e-mail by internet (df2fq@amsat.org) or packet radio (df2fq@db0pv.#bay.deu.eu).

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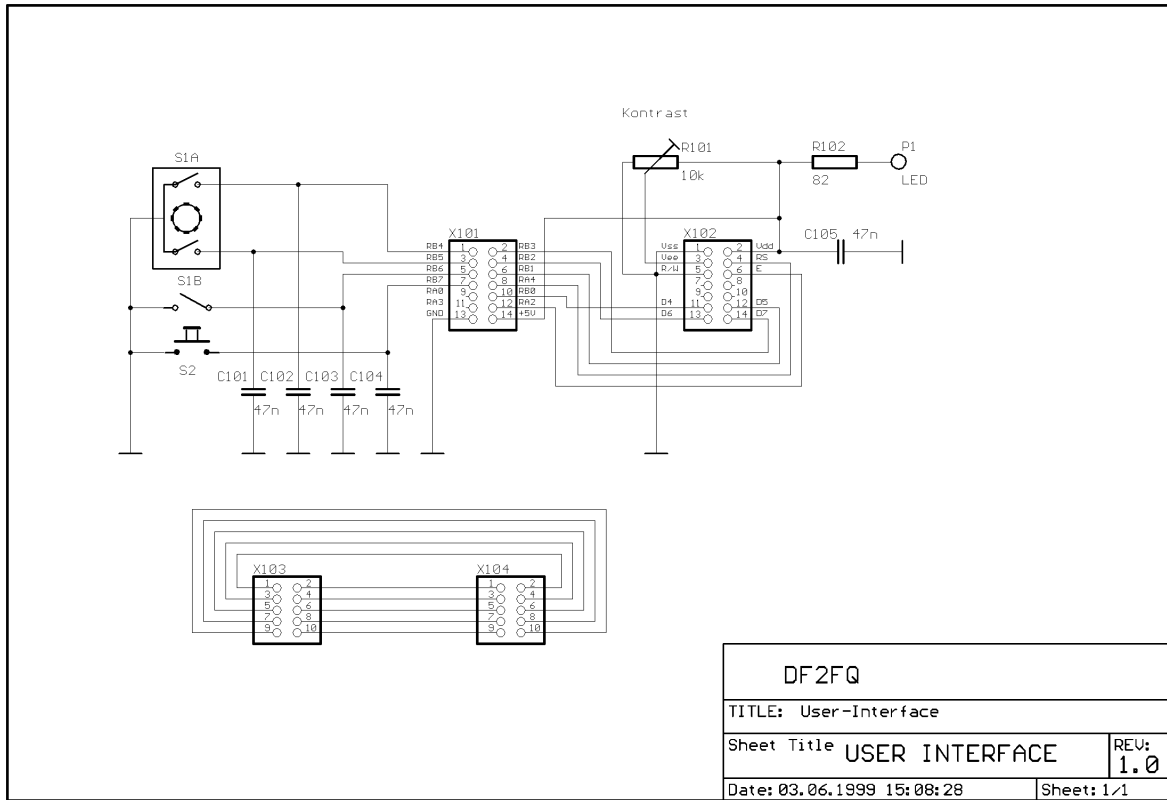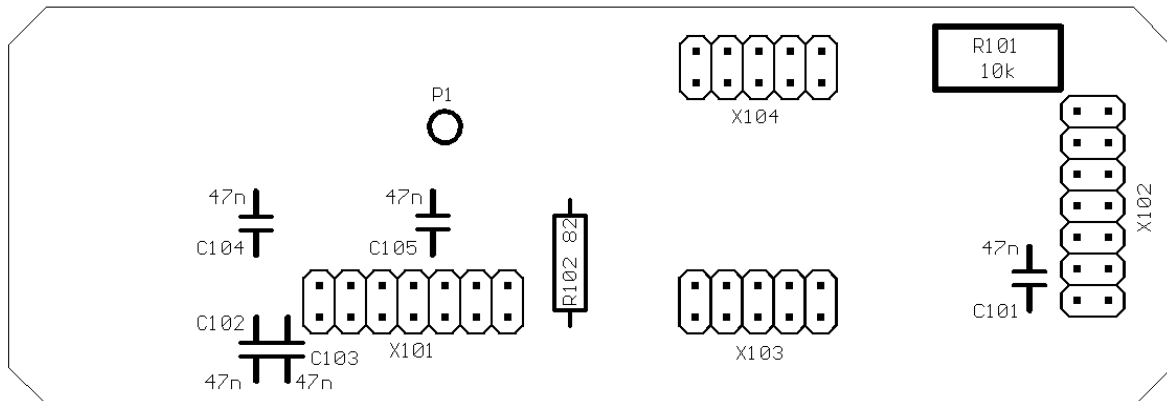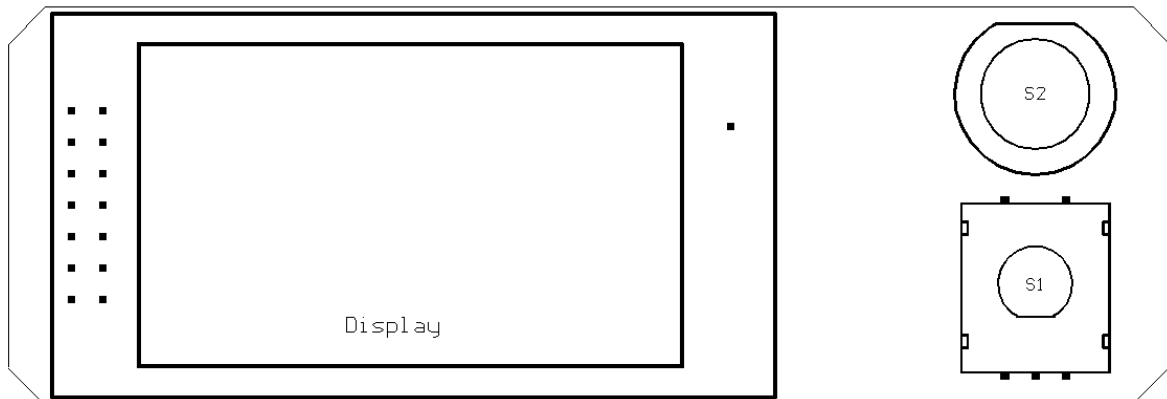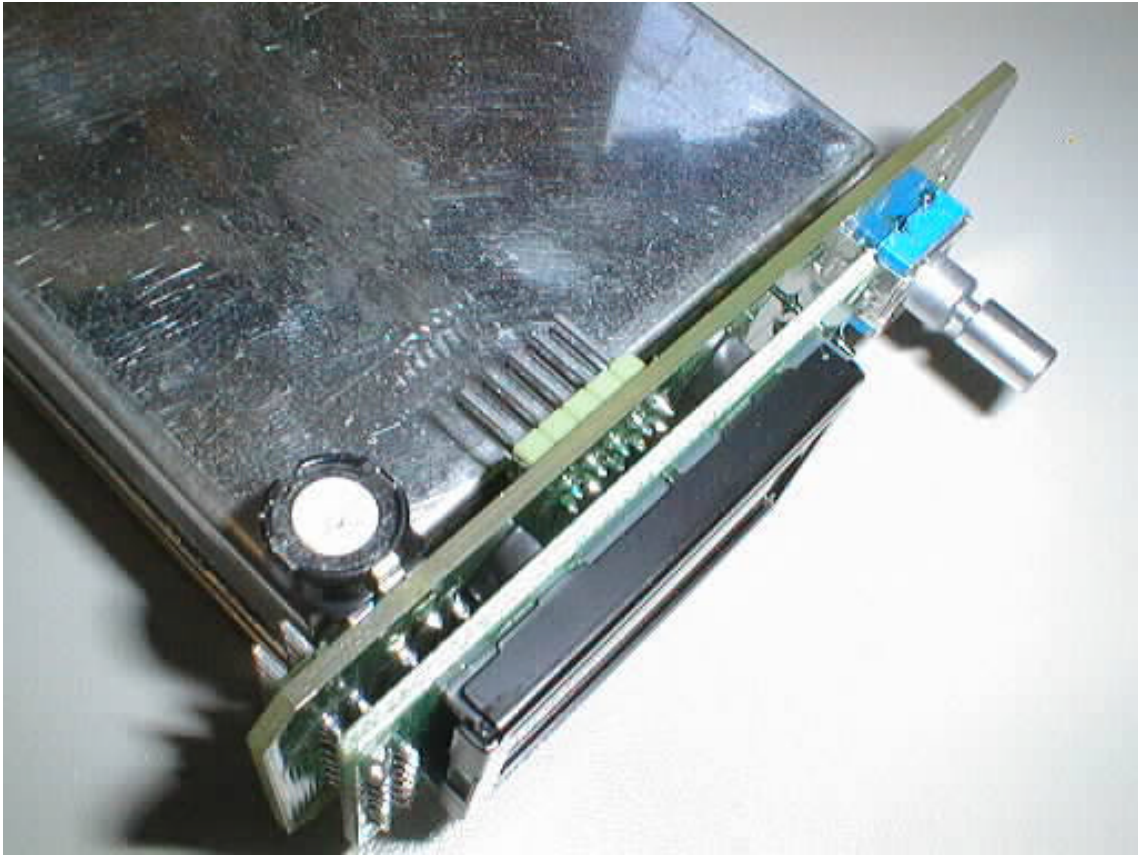
Fig. 1, Schematic diagram

Fig. 2, Place plan component side

Fig. 3, Place plan solder side

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Fig. 4, Mounted user interface