

MC 70 (1.0.5) User Manual

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After power-up the version of the current firmware is shown. Afterwards the display shows the receive frequency in kHz (6 digits, the 7th digit is omitted).

The TRX tries to access the last state (frequency & tx-shift) in the EEPROM. If this fails, the yellow LED blinks for a short time and the device is initialized from ROM.

The frequency stepping is fixed to 12.5 kHz in version 1.0.4, as mentioned before, the '5' (e.g. in 439,9875) is not shown, but set.

Meaning of the LEDs:

Green – TRX operational / switched on

Yellow – PTT (during initialization: read error while accessing EEPROM)

Red – PLL does not lock

Remark: Short illumination of the red LED usually means, that the PLL-lock-state was read when changing frequency (e.g. while switching between RX & TX). This will be corrected in future versions.

Handling

Main Menu

(State after power-up)

– Frequency input

Enter frequency in kHz and set with #. Missing digits at the end will be filled with zeros.

- Enter (sets entered frequency)

* - Backspace (deletes last digit)

C - Clear (deletes complete input)

Example for 438,800 MHz:

438800# or 43880# or 4388#

Setting the frequency is confirmed with 'OK' or denied with 'NO LOCK'. The latter shows up if the PLL did not lock within 500ms, the entered frequency is being ignored. By using the Up/Down keys, it is possible to reach 'no lock' frequencies manually (e.g. for adjustment purposes).

– Frequency step up/down

using 12,5kHz steps is possible using the keys left of the display
(upper key = +, lower key = -)

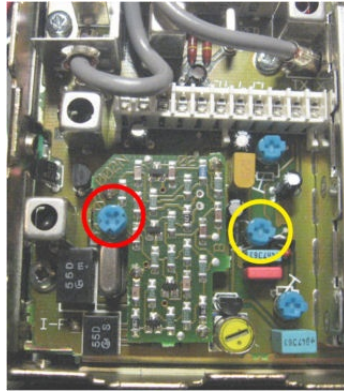
- **Squelch**

The left key beneath the display selects between 3 modes:

- Mode 1 (Demod-IC noise squelch - high sensitivity),
- Mode 2 (RSSI board level squelch - low sensitivity),
- Deactivated

Default: Mode 1 (Demod-IC)

The squelch levels can be adjusted on the HF-Board :



*Figure 1:
Yellow - Mode 1 level
Red - Mode 2 level*

The selected mode is shown using the arrows directly over the key:

On	Mode 1 (Demod-IC)
Blinking	Mode 2 (RSSI level)
Off	Deactivated

- **1750 Hz Tone**

The 3rd Key from the left beneath the display starts transmitting a 1750 Hz tone for 0,6s (generates the tone and keys the transmitter).

Pushing the key multiple times extends the duration.

(The volume of the tone can be set on the controller board using the "DATA MOD" potentiometer.)

- **Setting TX-shift**

Enter frequency (in kHz) and confirm pressing 'A'-key (2nd key from the right beneath the display).

The entered frequency is always interpreted as negative shift. Missing digits are interpreted as zeros.

Example -7,6 MHz:

76A or 760A or 7600A

- **De/Activation and displaying of the TX-shift**

Pressing the 'A'-key shows the current TX-shift and activates the shift submenu:

- Pressing A again activates or deactivates the shift
- * changes the sign (e.g. from -7,6 MHz to +7,6 MHz)
- # returns to the main menu (otherwise this happens after 4 seconds)

The selected setting is activated immediately.

The selected state is shown using the arrow over the 'A'-key:

On	Negative shift
Blinking	Positive shift
Off	Shift deactivated

- **Memory**

There are 25 memory slots in 3 banks (ten in banks 0 and 1, five in bank 2).

Frequency and TX-shift are being stored for each slot, as is the state (if the shift was activated).

Pressing the 'B'-Key (rightmost key beneath the display) activates the memory submenu and shows the active bank:

- B advances to the next bank
- 0-9 selects the corresponding slot, setting frequency and TX-shift
(Only slots 0-4 are available in bank 0)
- # is used to save the current settings:
 - 0-9 saves current frequency, TX-shift and TX-shift state to the corresponding slot of the activated bank.
 - C aborts and returns to main menu
(otherwise this happens after the usual 4 seconds)

Example to store current settings to bank 0 / slot 2:

B	(until MEMBNK 0 is being shown)
#	(SLOT? is displayed)
2	(Frequency and TX-shift saved, return to main menu)

- **Default-Frequency**

Pressing the #-key saves the current frequency and TX-shift as default frequency to the EEPROM. These settings are read and set during power-up.

Successful programming of the values to the non-volatile memory is confirmed by displaying „STORED“.

Remark: 'C' key shows the number of iterations of the 'control-task'. (PTT is checked and frequency being (re)set (if necessary) this many times per second.)

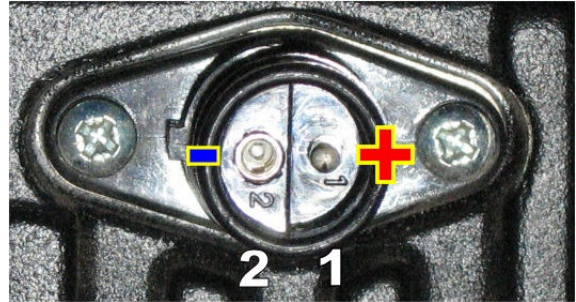
Software Update

Updates and instructions on how to perform the update can be found soon at:

<http://mc70.stus-disco.de> .

Power Connection

Pin 1 – Power (10,8 V – 15,6 V)
Pin 2 – Ground (Case)



Pinout of Sub-D Connector

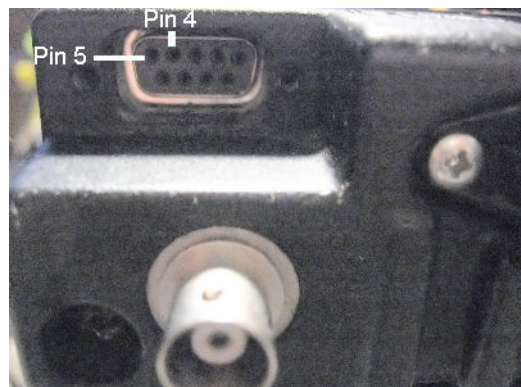
Pin	Signal
1	PTT (low-active)
2	GND
3	not used
4	Speaker Audio
5	Speaker Ground (connected directly to ground at the audio PA transistor)
6	Microphone
7	Buffered RX Audio / Discriminator output(FSK Option)
8	Squelch (open collector, 0V = signal detected)
9	not used / Mod. Input (FSK Option)

Connecting a speaker

Possibility 1

Sub-D Connector at the backside

Pin 4 – Audio
Pin 5 – Ground



Possibility 2

Soldering points at the display modules (e.g. when separating TRX and display)

Pin 1 – Ground
Pin 2 – Audio

