KM500-KBD
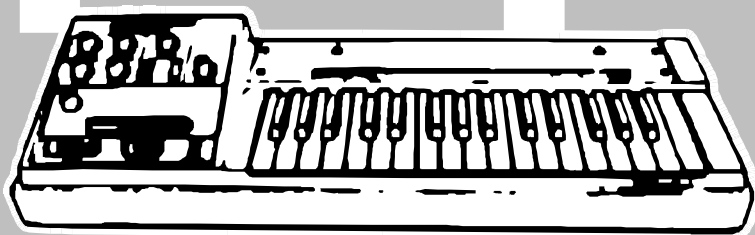
MIDI Interface for
Korg M500 Micro-Preset Keyboard

Model 8-428
Version 1.0

Service Guide

1   INTRODUCTION

The KM500-KBD interface includes EEPROM type memory for storing of basic firmware data. Necessary data are programmed to the memory during the interface manufacturing so **you need not to reload the data when the new interface is being installed**. Only when the content of the memory is damaged or when interface's CPU is upgraded, you have to load the data to the memory again.

If the memory content is unreadable for the interface's CPU (it is damaged or it is of different version), the interface doesn't work and it indicates fatal error status – indication LED of the interface blinks in yellow continuously. In that case, execute procedure described in chapter 2.

If the interface's CPU was replaced with another one with higher software version, it is recommended to adjust the interface as described in chapter 3.

2   FIRMWARE DATA LOADING

2.1   PREPARE THE INTERFACE (INSTRUMENT)

1. Interconnect the interface with your DAW / PC bi-directionally (with both MIDI cables – fig. 1).
2. Insert a jumper to the "TEST" plug head on the interface board (fig. 2).
3. Plug instrument's power supply cable to a mains socket and switch the instrument on. **Attention - work very carefully during all next procedures - there is a risk of electric shock!**
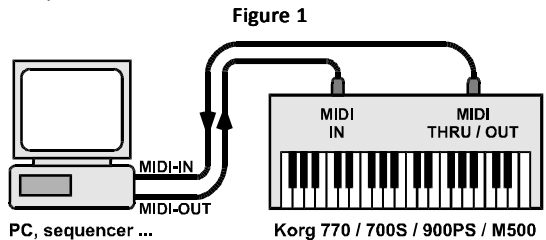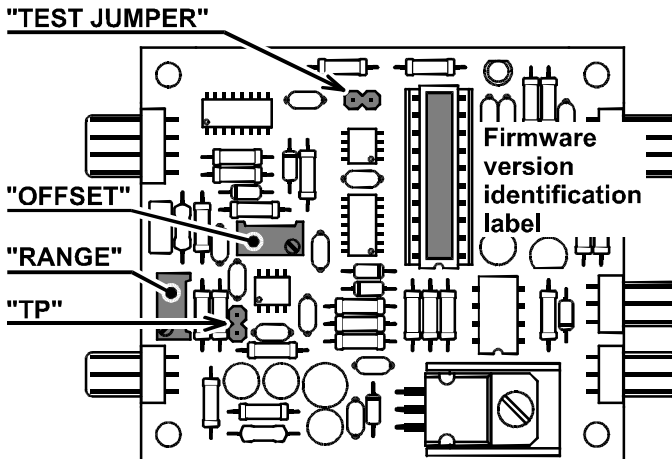
Figure 1

MIDI-IN
MIDI-OUT
PC, sequencer ...

MIDI IN
MIDI THRU / OUT
Korg 770 / 700S / 900PS / M500

Figure 2

"TEST JUMPER"

Firmware version identification label

"OFFSET"

"RANGE"

"TP"

2.2 CHECK FIRMWARE VERSION OF YOUR INTERFACE

Actual firmware version is written on label on the interface's CPU (see fig. 2). If the label is missing or unreadable, it is necessary ro read the actual version number from the CPU. This is feasible via MIDI SysEx communication.

1. Enable SysEx messages record / monitoring on your DAW / PC.
   Send "SW Version Request" (i.e. [**F0 00 20 21 7F 44 50 04 00 68 F7 hex**]) SysEx message from your DAW / PC to the interface.
2. Red LED on the interface board blinks.
3. The interface responds immediately by "SW Version Response" SysEx message. Form of the message is: [**F0 00 20 21 7F 44 50 04 vv xx F7 hex**] where the [**vv**] byte is the version number (e.g. [**10 hex**] byte represents version "1.0", [**20 hex**] byte represents version "2.0", etc.).

2.3 LOAD THE DATA

1. Open necessary MIDI file (according to version number previously read) with the basic firmware data in your DAW / PC. You can find the archive with required MIDI files on our web site **www.chd-el.cz**.
2. Replay the MIDI file from your DAW / PC to the interface.
3. Red LED on the interface board blinks fast during the data transfer.
4. After the data are transferred, both indication LED and red LED on the interface board go off.

2.4 EXIT THE DATA LOADING

Switch the instrument off and remove the "TEST" jumper. Now you can end the uploading procedure or you can continue to interface adjustment procedure.

- If you want to end, close the instrument. The next time you turn on the instrument, it will work with new firmware data.
- See next chapter for continue to adjustment procedure.

3   ADJUSTMENT PROCEDURE

There are two variable resistors on the interface board labeled "OFFSET" and "RANGE" (fig. 2). They have to be adjusted before the upgraded interface is used. Adjustment procedure is following:

1. Connect MIDI output of your MIDI master keyboard (or PC / sequencer / DAW) to MIDI input of the interface[1].
2. Connect "HIGH" audio output of the instrument to a tuner or to a frequency meter.
3. Set all controllers on the instrument's panels to a clear sound without any modulation:
   - PITCH knob → to **0** (middle position)
   - VIBRATO switch → to **OFF** (middle position)
   - REPEAT switch → to **OFF** (middle position)
   - TONE rotary selector → to **4'** (second position from top)
   - TONE switch selector → to **WOOD** (i.e. FLUTE tone is selected)
   - PORTAMENTO switch → to **OFF** (middle position)

   Positions of all other controllers on instrument's panel are not significant.

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[1]   Set transmit MIDI Channel to number 1 on the master keyboard.

4. Switch the instrument on by main switch joined with the POWER/VOLUME knob and turn the knob fully clockwise (to maximum).
5. Now, the interface is in "Stand-by" mode - the interface's indication LED is off. If not, press the "RESET" button of the interface[2].
6. **Wait a few minutes** to stabilize the temperature of all instrument circuits.
7. Measure the voltage between pins of the "TP" jumper head (fig. 2) with a quality digital multimeter. It should be zero volts exactly. If it is not, adjust it with "OFFSET" variable resistor (fig. 2).

Figure 3

8. Press the C3 key on the instrument's keyboard (fig. 3) – the interface's indication bi-color LED remains off.
9. Measure the output tone frequency by the tuner (frequency meter). It should be 1047 Hz approx. Remember the measured tone frequency. Then release the C3 key.

10. Press the C3 key on the master keyboard (i.e. send MIDI Note Nr. 84 to the interface) and hold it. The interface's indication LED will light in green.
11. Check the output tone frequency by the tuner (frequency meter) again. It must be the same as the frequency measured in paragraph 9. If it is not, adjust it with "RANGE" variable resistor on the interface board (fig. 2.9.1).
12. Release the C3 key on the master keyboard. Switch the instrument off and close the instrument.

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KORG M500 MIDI Interface
Model KM500-KBD, Nr. 8-428, ver. 1.00
Document: 842810_service

Manufacturer: CHD Elektroservis, Czech Republic

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[2] It is suppossed that the interface is in "Factory Reset" status before the adjustment procedure. If it is not, send the **F0 00 20 21 7F 54 50 03 7F 5A F7 [hex]** SysEx message to the intarface first.