# How to reprogram the preset frequencies of the CDP-TX-07MP/CDP-RX-07MP 869 MHz

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Ver. 1.0

## Installation of the software

This software operates on Microsoft Windows.
Copy "Tx07mp(869M).exe" or "Rx07mp(869M).exe" to any folder on a PC. The software is created using Visual Basic and the following runtime libraries are needed.

MSCOMM32.OCX / MSFLXGRD.OCX / COMDLG32.OCX

If these files are not installed on your PC, please obtain them from the internet e.g. Microsoft

The explanation below is for CDP-TX-07MP (869M). In the case of CDP-RX-07MP (869M), replace "CDP-TX-07MP" and "Tx07mp(869M).exe" with "CDP-RX-07MP" and "Rx07mp(869M).exe" respectively.

## Explanation of the software

When running the "Tx07mp(869M).exe", the window shown right will appear.
Frequency parameters can be changed via COM port (RS-232C) and in UART format.



**1 [Open] button**
Opens or closes the selected COM port. The usable COM ports are from COM1 to COM16 due to the restriction of the MSCOMM32.OCX. Other buttons do not function while the COM port is closed and the operation of the button 2 is enabled when the COM port is open.

**2 [Get Info] button**
Obtains the data below from the CDP-TX-07MP. Once the information is successfully obtained, the buttons 5 to 7 are enabled.

**[FW Ver.]**
The program version of the CPU is shown.

**[S/No.]**
This is for manufacture's factory inspection and is supposed to be the product serial number.

**3 [Freq.[MHz]**
Select the frequencies from the pull-down lists. The selectable frequencies with a 12.5 kHz step are in the range from 868.050 MHz to 869.975 MHz.

**4 [Up] [Down] button**
Moves up or down the frequencies with a 12.5 kHz step from 868.050 MHz to 869.975 MHz.
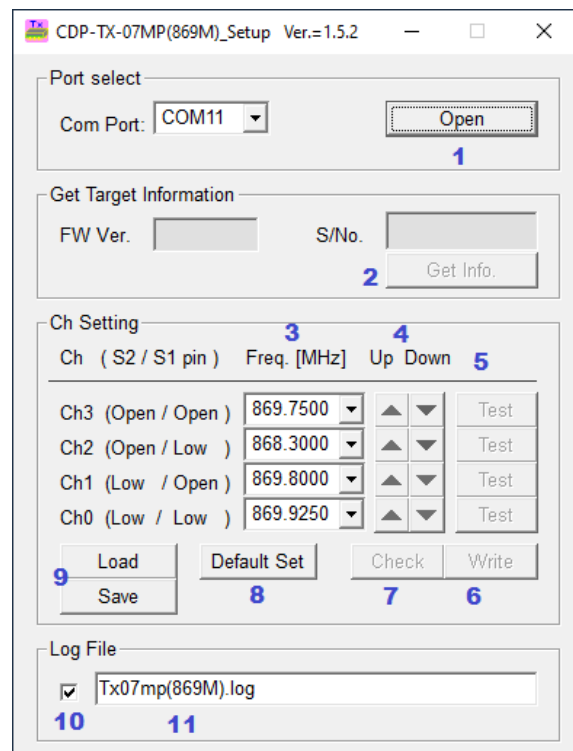
**5 [Test] button**

Sets the CDP-TX-07MP to the operation status at the selected frequencies. This is only for test purpose and the CPU flash memory is not yet rewritten. The CDP-TX-07MP will be back to the original setting when its power is turned off.

**6 [Write] button**

Rewrites the flash memory in the CPU to set the selected frequencies. When the box 10 is checked, the log is stored in the file specified in the field 11.
While the rewrite is performed, all buttons do not function. Once the rewrite is done, the color of entry fields changes to green as shown right and button operation is enabled.

**7 [Check] button**

Checks if the values written in the flash memory conform to the setting values. The color of the entry field(s) where the setting value matches will turn green.

**8 [Default Set] button**

Set the values in the [Frequency [MHz] ] fields to the default values. (The flash memory of the CDP-TX-07MP is not rewritten.)

| S2 / S1 | Freq. [MHz] |
|---|---|
| Open  Open | 869.750 |
| Open  Short | 868.300 |
| Short  Open | 869.800 |
| Short  Short | 869.925 |
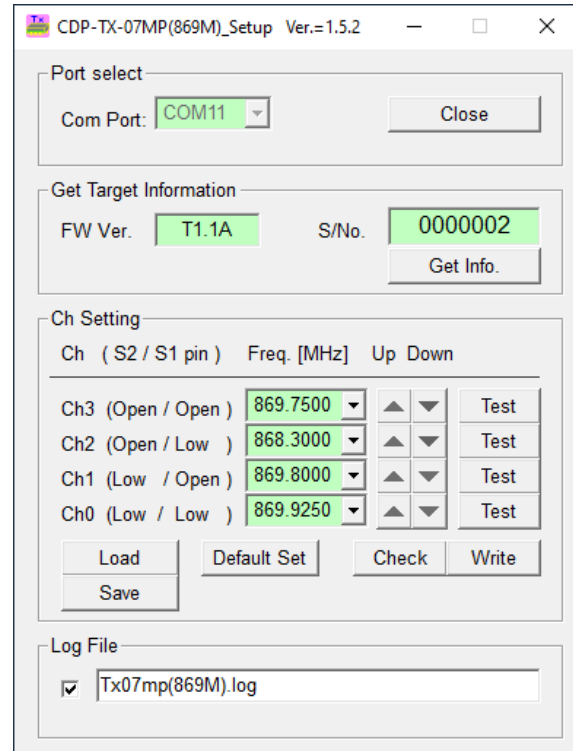
**9 [Load] [Save] button**

The frequencies selected in the [Freq [MHz]] field can be saved to or loaded from a file. The standard file extension is "*.tbl".

**10** Check this box to save the log file of rewriting to the file specified in the field 11.

**11** Specify the name of the log file. The file is saved to the folder where the "Tx07mp(869M).exe" is stored.

\* When executing the "Tx07mp(869M).exe", a file named "Tx07mp(869M).ini" is created in the same folder. This is to record the changed parameters and reflect the changes when the program starts up next time. (Windows system registry is not changed.)

## Procedure of frequency change

1) Run the "Tx07mp(869M).exe" and select a COM port. Press the [Open] button.
2) Connect the CDP-TX-07MP to the COM port with the power turned off and then power on the module.
   (The program version may be displayed in the [FW Ver] field in this timing.)
3) Obtain information by pressing the [Get Info.] button.
4) Select the frequencies and press the [Test] button. Check the operation and waveforms at the selected frequencies using a measurement equipment.
5) If problem is not found by the test above, press [Write] button to rewrite the flash memory of the CDP-TX-07MP.
6) When all entry fields turn green, the rewrite is successfully done.
7) The frequency change of the next unit can be done by repeating from 2.

## Output format of the log file

The log data is output as follows;

"0000002,T1.1A,869.7500,868.3000,869.8000,869.9250,2022-03-14 ,14:53:49 ,1.5.2"

| | | |
|---|---|---|
| S/No= | "00000002" | |
| CPU FW version= | "T1.1A" | "T*.**" for TX and "R*.**" for RX |
| Ch3 Frequency= | "869.7500" | S2/S1 = Open/Open Setting data. |
| Ch2 Frequency= | "868.3000" | S2/S1 = Open/Short Setting data. |
| Ch1 Frequency= | "869.8000" | S2/S1 = Short/Open Setting data. |
| Ch0 Frequency= | "869.9250" | S2/S1 = Short/Short Setting data. |
| Date= | "2022-03-14" | Ch setting change date & time. |
| Time= | "14:53:49" | The output format may be different depending |
| This program version= | "1.5.2" | on the language settings on the PC. |

## Connection to a COM port

Frequency change of the CDP-TX-07MP/CDP-RX-07MP can be performed by using a COM port of a PC.

Normally the output logic of COM is inverted and the signal levels are Hi=-12 V and Lo=+12V. So level conversion using a circuit shown below will be required.

When the COM port is opened, the DTR output level becomes +12V and charges the capacitor of 33uF.

Input signal (RXD) to COM also should be Hi=-12 V and Lo=+12V, but since the threshold to judge High or Low is +1.5 to 1.8V, the circuit below fully works.

The signal from MODE, S2, S1 is pulled-up to the internal Vcc in the module.

    CDP-TX-07MP:   Vcc = VIN

    CDP-RX-07MP:   Vcc = +2.7V (Internal regulator output voltage)

This circuit controls the signal by Open/Gnd-short to prevent the input level to the module from overvoltage.
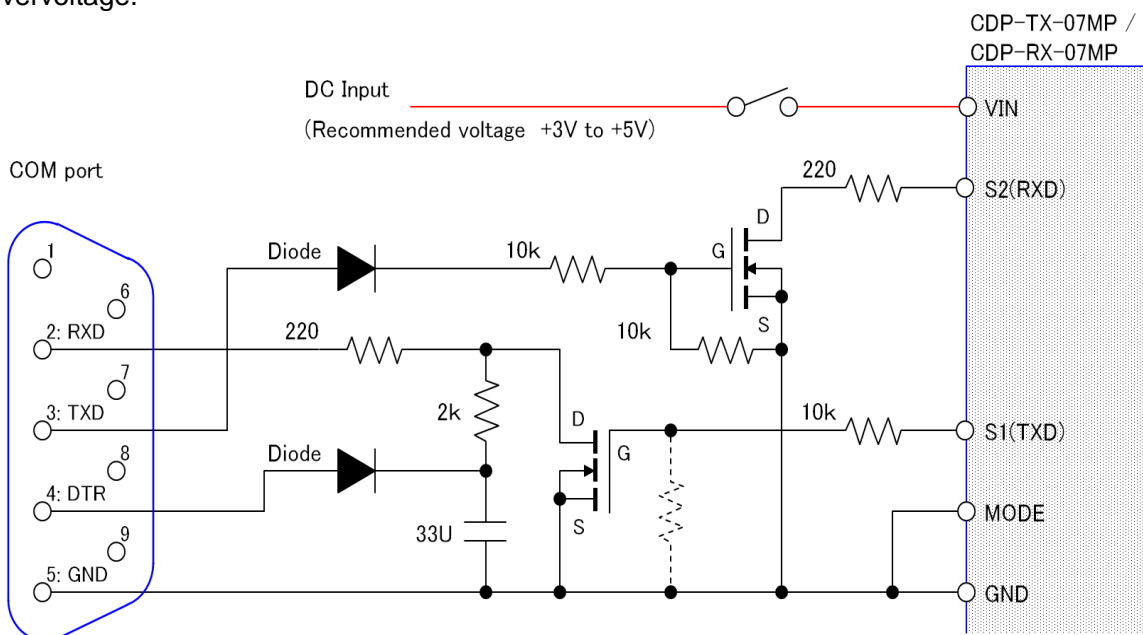


For the FETs, general switching FETs (N-ch) operating at low voltage can be used.
Transistors (NPN) are also usable.
For the diodes, general rectifier diodes can be used.

## Caution

**When setting the frequency according to your application, please follow the rules concerning duty cycle by referring to the information contained in ERC Recommendation 70-03 and EN 300 220 as mentioned in the operation guide.**

| Issue | Date | Comment |
|-------|------|---------|
| 1.0 | 2022/06/21 | Start of document |
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