ERASynth Micro: USB-Powered, Low-Priced, Open Source, RF Signal Generator

FIRMWARE UPDATE INSTRUCTIONS

ERASynth Micro has three types of firmware that can be updated:

- Arduino Micro Code
- Arduino EEPROM Code
- LCD GUI uploader

1) First one is the firmware of the main MCU (ATMEGA32U4) of the device. This MCU is the same as in the Arduino Micro board. Arduino IDE can be used to upload firmware into ERASynth Micro same as uploading to the Micro board thanks to using the same MCU family.
2) Second one is the firmware which uploads all required data to EEPROM. This Arduino based firmware can be uploaded via same Arduino IDE.
3) Third and the last one is the LCD GUI uploader software. ERASynth Micro utilizes Nextion NX4024T032 LCD screen. This is a special plug and play LCD which uses serial port for communication. It runs its individual code. Therefore, it is separate from ERASynth Micro's Arduino code. LCD GUI Uploader checks erasynth-micro-lcd-gui repository for latest release an uploads this release to ERASynth Micro's LCD via Serial port.

- ✓ ERASynth Micro must be connected via a stable micro-USB cable. A power bank or a mobile device charger that can supply 5V and at least 500 mA of current can be used as a power supply.
- ✓ Versions of the firmware's are shown on the LCD GUI at diagnostic tab.
- ✓ We recommend you to check the latest versions on our GitHub page and keep your device up to date.

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Arduino Micro Code

1-) If it is not installed before, download the latest Arduino IDE from https://www.arduino.cc/en/Main/Software and install.

(ERASynth Micro is tested with 1.8.5 version of Arduino)

2-) Check erasynth-micro-firmware (https://github.com/erainstruments/erasynth-micro-firmware) repository first. There will be announcements which indicates EEPROM update if necessary.

3-) If EEPROM update is necessary, please update EEPROM code (check Arduino EEPROM Code part) first. Otherwise ERASynth Micro does not work properly. Instructions will show you which versions are compatible with latest firmware. Please select correct EEPROM release.

2-) Download the latest ERASynth Micro firmwares from GitHub. https://github.com/erainstruments/erasynth-micro-firmware/releases

3-) Open erasynth_micro.ino file with Arduino IDE.

4-) Change board to Arduino/Genuino Micro. Go to Tools>Board> Arduino/Genuino Micro

5-) Connect ERASynth Micro via micro USB cable and select the device from port (COM1,2,3, etc.). Go to Tools>Port

6-) Click upload.

7-) Arduino IDE will compile the project and upload a .bin file to the device. After upload is done, ERASynth Micro will do a one time factory reset. Please wait till Action LED blinks. **Please do not power off the device until LED starts to blink.**

Arduino EEPROM Code

1-) If it is not installed before, download the latest Arduino IDE from https://www.arduino.cc/en/Main/Software and install.

(ERASynth Micro is tested with 1.8.5 version of Arduino)

2-) Download the latest ERASynth Micro EEPROM code from GitHub. https://github.com/erainstruments/erasynth-micro-eeprom/releases

3-) Please select correct EEPROM release which is compatible with the firmware release. Read release notes carefully.

3-) Open eepromLoad.ino file with Arduino IDE.

4-) Change board to Arduino/Genuino Micro. Go to Tools>Board> Arduino/Genuino Micro

5-) Connect ERASynth Micro via micro USB cable and select the device from port (COM1,2,3, etc.). Go to Tools>Port Select the device from port (COM1,2,3, etc.). Go to Tools>Port

6-) Click upload.

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7-) Arduino IDE will compile the project and upload a .bin file to the device. After upload, this code will upload EEPROM with required data. After upload is done with success, Action LED will start blinking. **Please do not power off the device until LED starts to blink.**

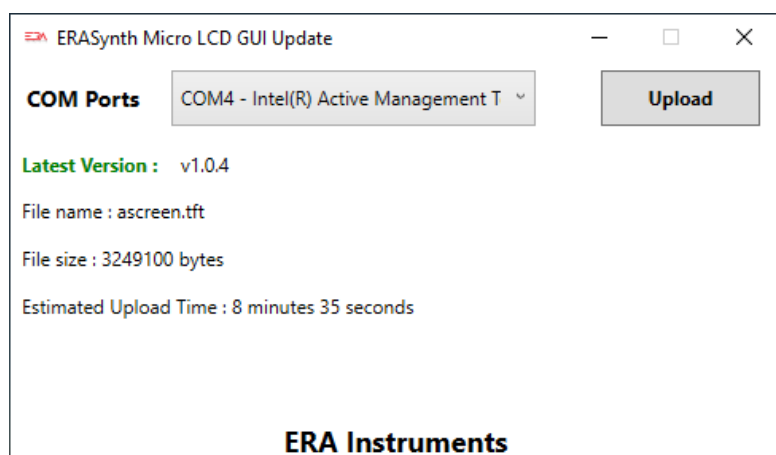8-) After EEPROM is successfully done, go to Arduino Micro Code step and upload the firmware.

LCD GUI UPDATE (WINDOWS ONLY)

1-) Download the update software from

https://github.com/erainstruments/erasynth-micro-lcd-gui/releases/download/v1.0.4/ERASynthMicroLCDGui.exe
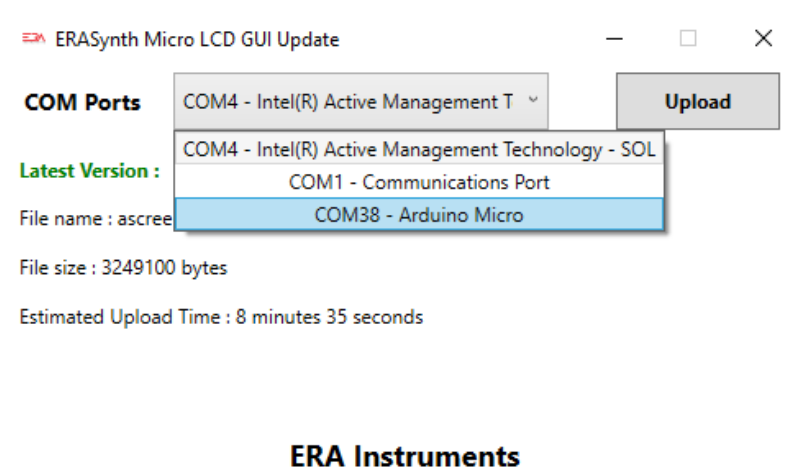
2-) Make sure you have good internet connection.

3-) First connect the ERASynth Micro to computer via micro USB cable then launch the software. Otherwise ERASynth Micro won't be available to select.

ERASynth Micro LCD GUI Update	— □ ✕
COM Ports COM4 - Intel(R) Active Management T ⌄	**Upload**

Latest Version : v1.0.4

File name : ascreen.tft

File size : 3249100 bytes

Estimated Upload Time : 8 minutes 35 seconds

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4-) This program will check erainstruments/erasynth-micro-lcd-gui repository for latest release of LCD GUI. It will automatically download the latest release of TFT file.

6-) Choose correct COM port and click **UPLOAD**

7-) Program displays the estimated time. If program shows any error, restart both ERASynth Micro and program.

8-) Power cycle the ERASynth Micro.