TD1202 ID0001 OVER THE AIR PROVISIONING

1 Overview

This document provides instructions for performing OTAP (Over The Air Provisioning) of the Telecom Design TD1202 module.

1.1 Scope

The TD1202 module contains a bootloader functionality integrated into its firmware, that enables software upgrades (“provisioning”) over either the UART RXD/TXD signals or using the integrated radio transceiver.

Using a host PC software provided by Telecom Design, it is possible to perform a local update of a single unit by attaching it to the computer using an UART cable directly.

It is also possible to perform a remote update of multiple units using a TD1202 Evaluation Board (TD1202 EVB) as a master radio transmitter for updating several slave devices over radio.

In both cases, a local update has to be performed to Flash the required firmware directly, or to Flash the intermediate master system, so this

1.2 Organization

For both local and remote updates, a local update has to be performed to Flash the required firmware directly, or to Flash the intermediate master system, so this step will be covered first.

The procedure for remote updates will then be detailed.

1.3 Relevant Documents

Additional information on the TD1202 module and on its dedicated evaluation board can be found in:

- *TD1202 Datasheet*
- *TD1202 EVB User’s Guide*
- *TD1202 Reference Manual*

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2 Local Update

The local update procedure allows updating a single TD1202 module attached directly to a PC using a serial cable.

2.1 Prerequisites

The following items are required in order to perform a local update:

- A PC running Windows XP, Vista or 7
- An USB to TTL serial cable, such as the TTL-232R-3V3 delivered as part of the TD1202 EVB
- The "**TD1202Loader.exe**" Windows executable program, Version 1.02 or higher. This utility can be obtained from http://developers.insgroup.fr/td1202/download.html
- The TD1202 module to update
- The firmware for updating the TD1202 module itself

2.2 Procedure Description

In order to perform a local firmware upgrade, please:

- Attach the USB to TTL serial cable to the PC USB Host port
- As the update utility will require the (virtual) port corresponding to the newly attached device, the best way to get it is to use Window's "**Device Manager**" from the Control Panel:
  - click on the "**System**" icon and select the "**Hardware**" tab
  - press the "**Device Manager…**" button
  - locate and unfold the "**Ports (COM & LPT)**" entry into the device tree list: you should see an "**USB Serial Port (COM*x*)**" entry corresponding to the newly attached TD1202 EVB device. If unsure, you can safely unplug/replug the USB cable to observe the changes into the "**Device Manager**" window
  - write down this "**COM*x***" information, so you can provide it later to the serial terminal emulation software
  - close Windows's "**Device Manager**" window
- Launch the "TD1202Loader.exe" utility. This will open a dialog window similar to this:

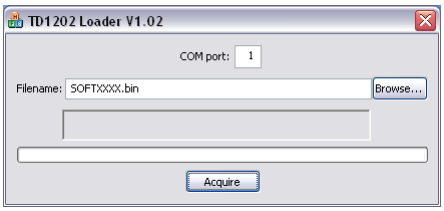

Figure 1- TD1202 Loader Dialog

- Provide the COM port number, as obtained from the "**Device Manager**" above
- Paste the firmware file absolute file name or browse to it using the "**Browse…**" button
- Press the "**Acquire**" button to start the local upgrade process
- Connect the TD1202 EVB board to the FTDI USB cable, you should see:

Figure 2- TD1202 Loader Synchronizing

- If the Loader cannot get synchronized with the TD1202 module, try to unplug/replug the cable on the module side and retry. You should then get:

Figure 3- TD1202 Loader Local Upgrade

- During the upgrade process, the TD1202 EVB onboard blue LED (or the LED attached to the TD1202 “TIM2” pin in case of a custom design) should turn on to indicate the beginning of the update process. Eventually, the LED should turn off at the end of the update process and you should get:

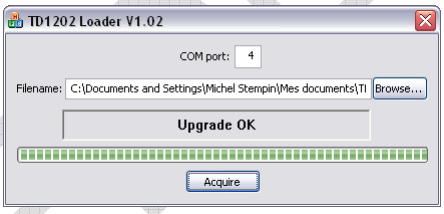

Figure 4- TD1202 Loader Finished

The module should be updated and ready to use. If this is not the case, try repeating the above points, making sure that the correct COM port and firmware file are used, and that the TD1202 is properly restarted (indicated by the LED turning on).

3 Remote Update

The remote update procedure allows updating multiple TD1202 modules using the TD1202 built-in radio transceiver.

3.1 Prerequisites

The following items are required in order to perform a local update:

- A PC running Windows XP, Vista or 7
- An USB to TTL serial cable, such as the TTL-232R-3V3 delivered as part of the TD1202 EVB
- The "**TD1202Loader.exe**" Windows executable program, Version 1.02 or higher. This utility can be obtained from http://developers.insgroup.fr/td1202/download.html
- The TD1202 module to use as a master transceiver
- The "**LoaderTransmitter.hex**" transmission firmware to put into the TD1202 master module
- The TD1202 modules to update
- The firmware for updating the TD1202 modules themselves

Note that the slave TD1202 modules to update should get a separate power supply, either by an additional USB to TTL serial cable, such as the TTL-232R-3V3 delivered as part of the TD1202 EVB, or any other mean depending on the way the TD1202 module is integrated into the customer device.

3.2 Procedure Description

- First, the TD1202 module used as a master module must be updated using the local update procedure described in section 2 above. The firmware file to use is the "**LoaderTransmitter.hex**"
- Press the "**Acquire**" button to start the remote upgrade process
- Power the TD1202 module, you should then get:

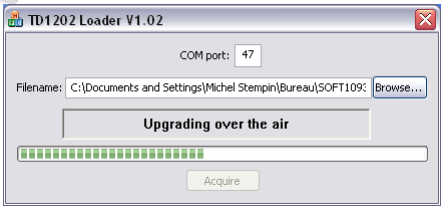

Figure 5- TD1202 Loader Remote Upgrade

- The TD1202 EVB onboard blue LED (or the LED attached to the TD1202 "TIM2" pin in case of a custom design) should turn on to indicate the beginning of the update process. Eventually, the LED should turn off at the end of the update process and you should get:

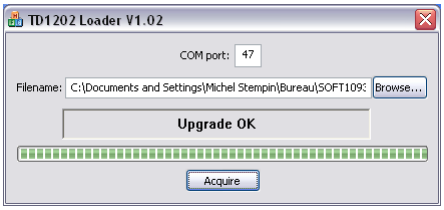

Figure 6- TD1202 Loader Finished

- The module should be updated and ready to use. If this is not the case, try repeating the above points, making sure that the correct COM port and firmware file are used, and that the TD1202 is properly restarted (indicated by the LED turning on).

DOCUMENT CHANGE LIST

Revision 1.0

- First Release

NOTES:

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