MAXIM

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APPLICATION NOTE 3087

Downloading a Program to Flash Using the MAX7651 EVKIT Serial Downloader

Abstract: This is the 3rd part of a 3-part application example and supplements the MAX7651EVKIT User's Guide. It gives a step-by-step procedure for transferring compiled program HEX code to the MAX7651EVKIT target board using the serial downloader and HyperTerminal.

Also See:

- Performing ADC Conversions Using the MAX7651
- Configuring Keil µVision IDE for the MAX7651EVKIT

The MAX7651EVKIT can execute programs using 16Kb of internal Flash memory or external ROMs located in the ZIF (U2) socket or the PLCC (U6) socket. Programming the internal flash is accomplished using the serial downloader program loaded into the PLCC socket with a standard "dumb" terminal program. This example uses HyperTerminal included in Windows 95/98/2000/XP. Other terminal programs that allow direct communication with the serial RS232 port can also be used.

Note: This procedure has been tested for the MAX7651EVKIT. It has not been tested for the MAX7652, which is a 3V version of the MAX7651. Some modifications may be necessary. Please see MAX7651EVKIT user guide for more information.

Before getting started, make sure the power switch at the top of the EVKIT is set to the off position. Connect the EVKIT with the supplied RS232 cable to the DEBUG port (J7) to an unused COM port in a PC. Connect the 5V power cable to the MAX7651EVKIT.

Note: HyperTerminal may have conflicts with software that uses the serial port such as a PDA hotsync manager. Disable the Hotsync Manager before proceeding.

1. Select the serial downloader by switching S4 to the EXT ROM position and S5 to the PLCC ROM position. This will load the serial downloader program in ROM when theEVKIT powers up.

2. Start HyperTerminal in windows. It is normally located in the Start Menu/Programs/Accessories/ Communication/Hyperterminal
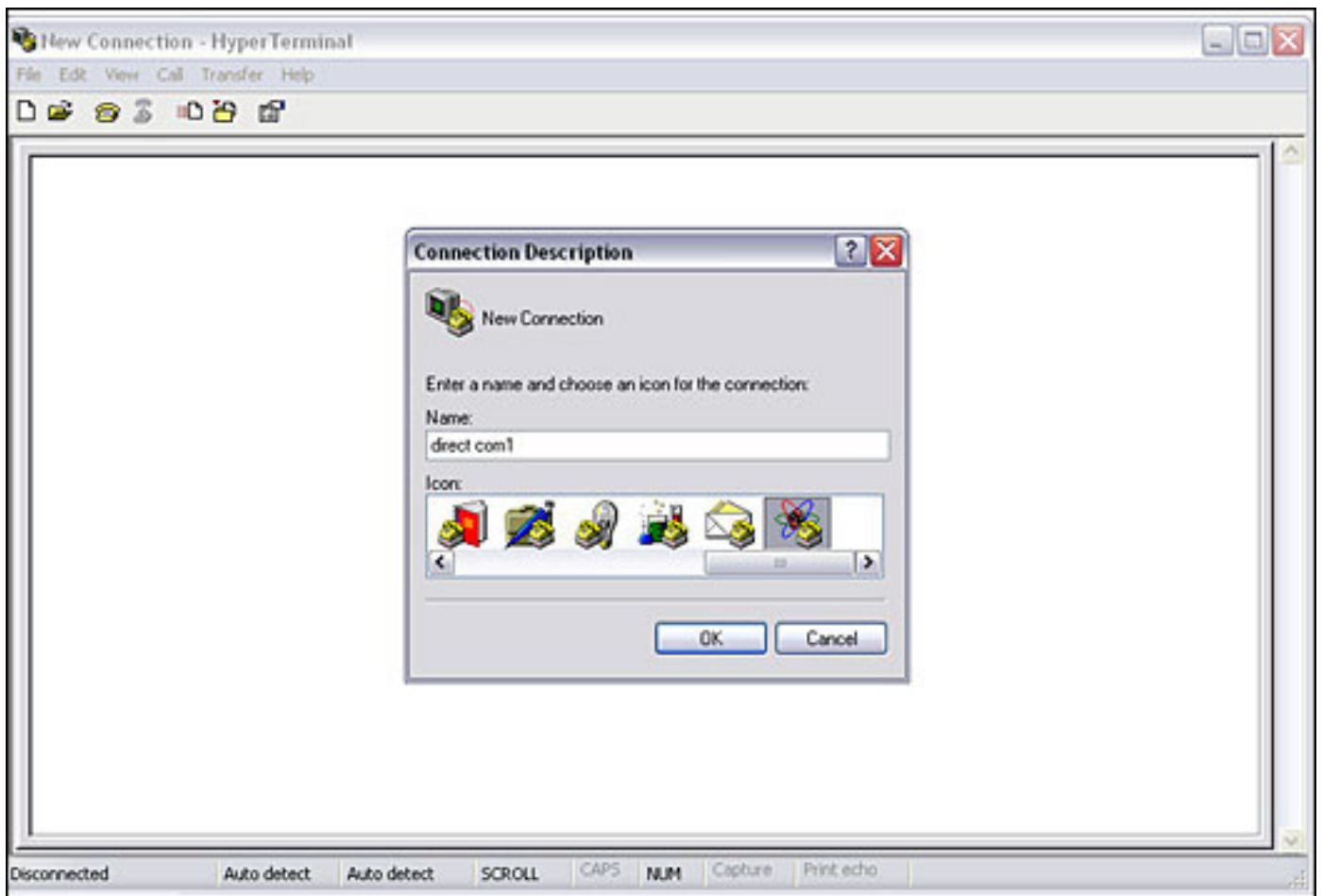
3. Select COM port

4. Select the following Serial Port parameters
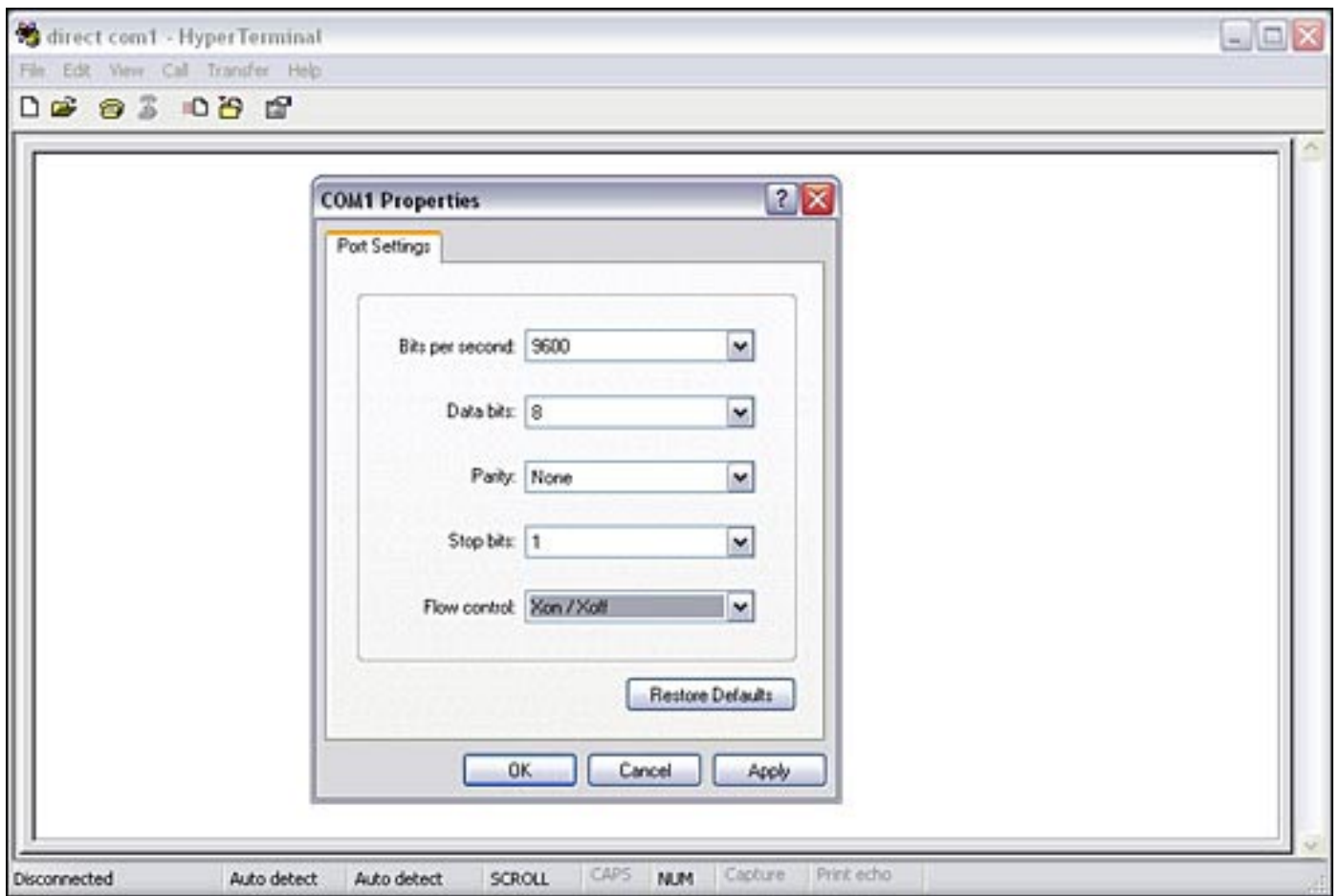
5. Turn on the power switch of the EVKIT. You should see the welcome screen.

```
direct1 - HyperTerminal
File  Edit  View  Call  Transfer  Help

Bootloader Version 1.0
Copyright (c) 1999-2001 Keil Software, Inc.
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Enter command:  help

HELP:
   HELP  -- This HELP Text
   INFO  -- Information About This Loader
   COMM  -- Communication Details

   ERASE -- Erase All FLASH Memory
   TEST  -- Tests ALL FLASH Memory
   LOAD  -- Starts HEX File Loader
   DUMP  -- Dumps All FLASH Memory Contents


Enter command:

Connected 0:00:28    Auto detect    9600 8-N-1    SCROLL   CAPS   NUM   Capture   Print echo
```

6. Type "ERASE" to clear the contents of the internal flash.

7. Type "LOAD" to begin the download process.

8. Using HyperTerminal, go to the Transfer Menu and select Send Text File. Locate and select HEX file to begin downloading code.

direct1 - HyperTerminal
File Edit View Call Transfer Help

```
:100B1F00756C6C2900D2011208003001F8C20178FF
:100B2F004430D50108F60208A62D50434958120843
:100B3F00002403B405004001E4900B389312082CF5
:0D0B4F00743A12082CD20375440402098B7D
:100C7800BB010689828A83E0225002E722BBFE027A
:090C8800E32289828A83E49322AD
:100C9100BB010CE58229F582E5833AF583E0225018
:100CA10006E92582F8E622BBFE06E92582F8E22262
:0D0CB100E58229F582E5833AF583E493227C
:100CBE00BB010689828A83F0225002F722BBFE0115
:020CCE00F3220F
:100CD000FAE6FB0808E6F925F0F618E6CA3AF62225
:100CE000D083D082F8E4937012740193700DA3A3A3
:100CF00093F8740193F5828883E4737402936860B7
:060D0000EFA3A3A380DFB6
:100D7500EFB40A07740D120D80740A309811A89902
:100D8500B8130CC2983098FDA899C298B811F630DE
:070D950099FDC299F59922B6
:00000001FF

HEX file downloaded successfully.


Enter command: _
```

Connected 0:05:56   Auto detect   9600 8-N-1   SCROLL   CAPS   NUM   Capture   Print echo

9. Turn off the power to theEVKIT. (S8)

10. Switch S4 to the INT Flash position.

11. Turn on power and the program will execute.

Application Note 3087: www.maxim-ic.com/an3087

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Related Parts

MAX7651: QuickView -- Full (PDF) Data Sheet

MAX7652: QuickView -- Full (PDF) Data Sheet

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