ZOOM

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1 Introduction

Congratulations on your purchase of the Zoom™ AM3517 eXperimenter Kit. This Zoom Development Kit provides a product-ready hardware and software platform for evaluating the functionality of the Texas Instruments™ (TI) AM3517 processor and the Logic System on Module (SOM).

1.1 Scope of Document

This QuickStart Guide will list the contents of the development kit, point out the features of the major components, and provide steps to verify your development kit is in working order; any additional usage instructions or details fall outside the scope of this document. Additional resources will be listed at the conclusion of this QuickStart Guide.

1.2 Zoom AM3517 eXperimenter Kit Contents

Boards
+AM3517 SOM-M2
+eXperimenter baseboard

Cables and Accessories
+5V power supply with US, UK, Japan, and Europe power adapters
+Serial cable (null-modem)
+USB A to mini-B cable

1.3 Unpack the Development Kit

Once you have verified that all the development kit items are present, carefully remove the boards from their protective anti-static bags. Check the boards for any visible damage and ensure that there are no broken, damaged, or missing parts.

IMPORTANT NOTE: Use ESD precautions when handling the boards.

Attention:
Circuit boards contain electrostatic sensitive devices. Observe precautions for handling. Handle boards by the edge and do not touch integrated circuits directly.
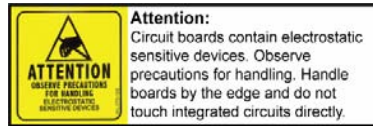
Figure 1.1 – Kit Hardware Contents

USB A to mini-B Cable

Null-modem Serial Cable

Power Adapters (only US cord shown)

Regulated 5V Power Supply
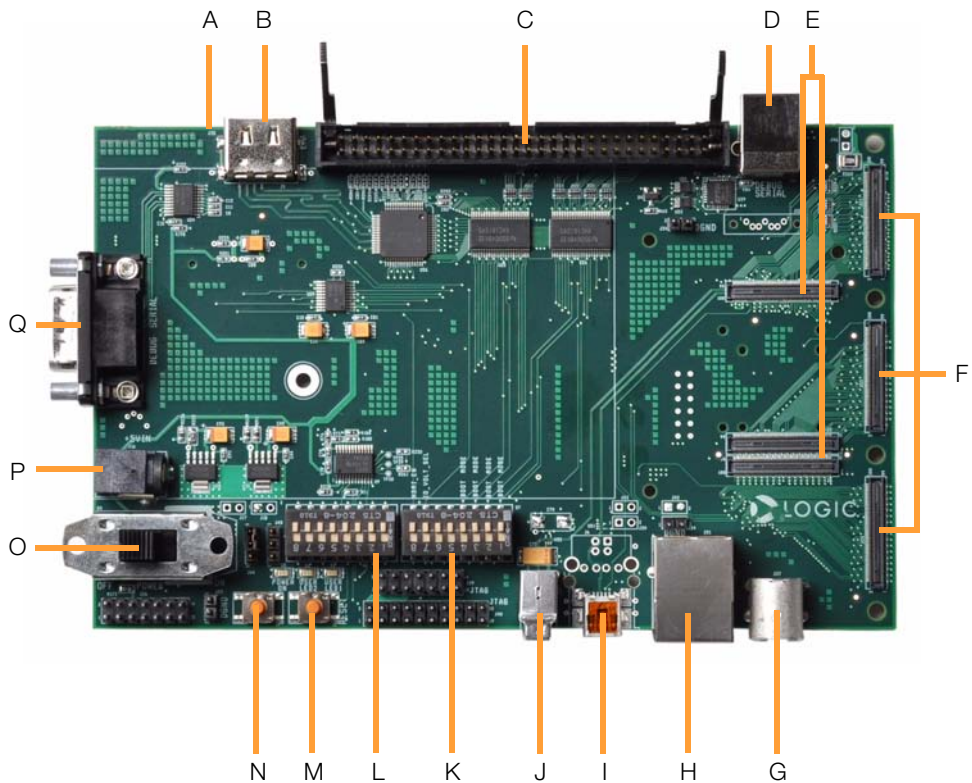
AM3517 SOM-M2

eXperimenter Baseboard

1.4 eXperimenter Baseboard Connection Diagram

Figure 1.2 – Connection Diagram for eXperimenter Baseboard

Connection Diagram Details

A – SD/MMC card slot (on bottom of board)
B – HDMI video port
C – 60-pin header for integrated LCD, touch, backlight, connector power
D – USB Type B port (serial debug)
E – Three 100-pin board-to-board (BTB) socket connectors for SOM-M2
F – Three BTB expansion connectors for Application Board
G – S-Video out port
H – RJ45 Ethernet jack with magnetics
I – USB On-the-Go mini-AB port
J – USB host Type A port
K – Boot mode / HDMI enable / IO voltage select DIP switches (S7)
L – General purpose user DIP switches (S2)
M – System reset button
N – System user button
O – Power on/off switch
P – Power-in from 5 volt regulated power supply
Q – DB9 serial debug port

2 Development Kit Set-up

2.1 Register your Development Kit

Registration provides you access to the latest revision of this QuickStart Guide, as well as other documentation and software tools. In addition to downloads access, registration provides future notifications when Logic releases documentation and software updates for your product.

1. To register, visit the Logic Support website at www.logicpd.com/product-support and click on "Create an Account".
2. Fill in the on-screen form and click the "Submit" button.
3. You will receive an e-mail with a URL link to confirm account creation. Click on the link to finalize account creation.
4. You will be directed to a page on Logic's website that states "Account Activated". At this point you can register your product. Click on the link to "register your development kit and get access to downloads".
5. Fill in the on-screen form (all fields are required) and click the "Submit" button.
6. Your product is now registered. Click on the "Return to your Account Overview" link and you will see the list of registered products for your account.

Under the heading for "AM3517 eXperimenter Kit", click the "All Downloads" link to access the downloads associated with your Zoom AM3517 eXperimenter Kit.

2.2 Connect SOM-M2 to eXperimenter Baseboard

The AM3517 eXperimenter Kit comes with the AM3517 SOM-M2 that connects to the baseboard via three board-to-board (BTB) socket connectors.

1. Align the AM3517 SOM-M2 over the three BTB socket connectors on the eXperimenter baseboard. See Figure 2.1.

Figure 2.1 – Align SOM-M2 over eXperimenter Baseboard
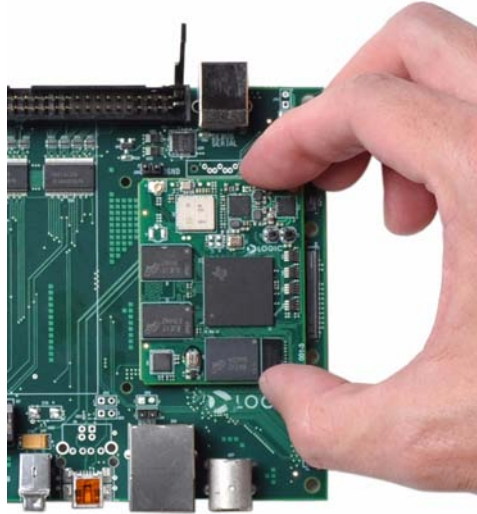
2. Press straight down on the SOM-M2, applying even pressure over the eXperimenter baseboard BTB socket connectors. See Figure 2.2.

Figure 2.2 – Connect SOM-M2 to eXperimenter Baseboard

3. Visually verify that the BTB socket connectors on the SOM-M2 and eXperimenter baseboard have mated correctly. To remove the SOM-M2, pull up on the board above the BTB socket connectors. Attempt to pull straight up and refrain from flexing the printed circuit board (PCB) to avoid damaging the SOM-M2.
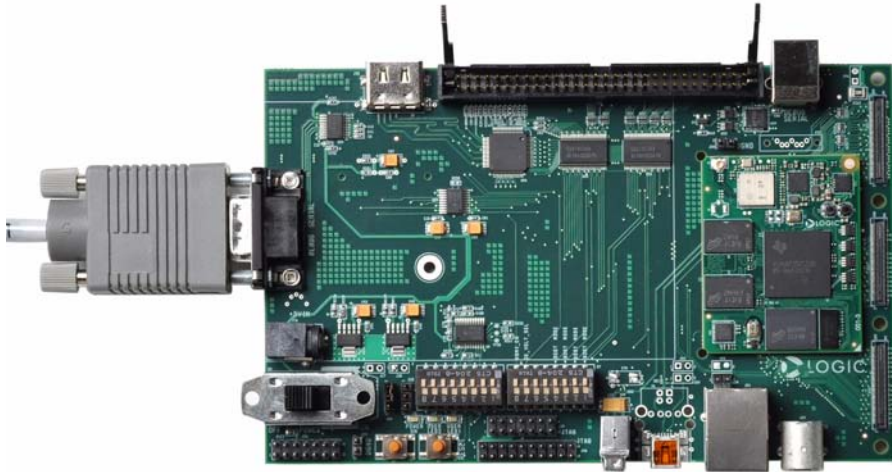
2.3 Connect Development Kit to PC

In order to communicate with the AM3517 SOM-M2, the development kit needs to be connected to a PC. The following steps will walk you through this process for communicating with the AM3517 processor.

1. Connect the null-modem serial cable (supplied in the kit) to the serial port connector on the eXperimenter baseboard and to an empty COM port on the your PC. See Figure 2.3.
    Note: If your computer does not have a serial COM port, you can use the USB Type B serial debug port on the baseboard and a USB A to B cable (not included). More detailed information on this setup option is available in the *Zoom AM3517 Development Kit User Manual*, available on the Logic website: http://support.logicpd.com/downloads/1251/.

**Figure 2.3 – Connect Null-Modem Serial Cable to eXperimenter Baseboard**

2. Connect the regulated 5V power supply to the appropriate power adapter for the geographic region in which you are using the development kit.

Figure 2.4 – Connect Power Supply and Adapter

3. Plug the power adapter into an electrical outlet and the 5V line output connector into the power-in connector on the eXperimenter baseboard.

Figure 2.5 – Connect Power to eXperimenter Baseboard
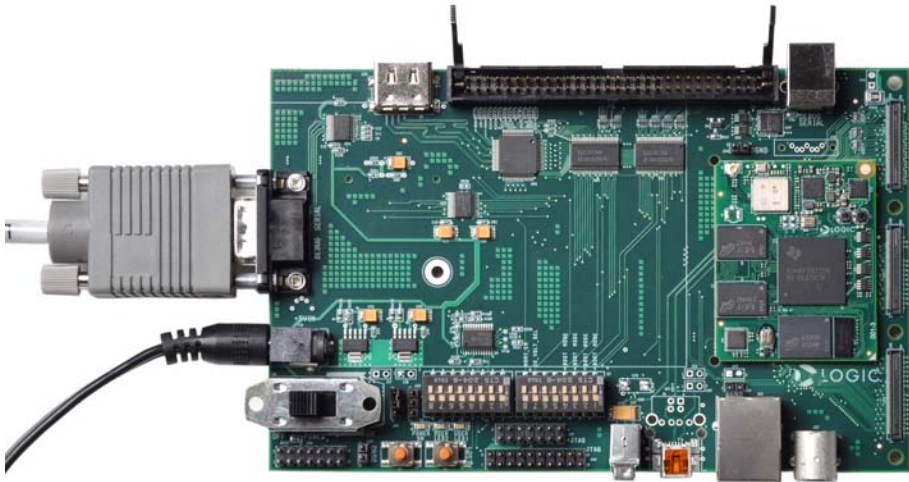
4. Verify the baseboard DIP switches are all set in the "OFF" position. Refer to Figure 1.2 for location of DIP switches.
5. Before powering on your kit, you will need to install a terminal emulation program. Please see the next section for details.

2.4 Terminal Emulation Installation

The Zoom AM3517 eXperimenter Kit is designed to communicate with terminal emulation programs using the included null-modem serial cable. The terminal emulation program must support binary transfers in order to download software to the kit. Although Logic does not support any particular terminal emulation program, we suggest using Tera Term Pro for Windows 2000 or XP (Tera Term Pro is not available for Linux users). Tera Term Pro can be downloaded for free from Logic's website. To install Tera Term:

1. Download the .zip file from Logic's website and unzip the contents: http://support.logicpd.com/downloads/240/
2. After unzipping the contents, locate the "setup.exe" file and double-click it.
3. Follow the on-screen instructions to install Tera Term.

Once the terminal emulation program has been installed on your PC, click on 'Setup' and select 'Serial port...' to open a new serial port connection using the COM port where the null-modem serial cable is connected to the host PC. Set the 'baud-rate' to 115200, 'data' to 8-bit, 'parity' to none, 'stop' to 1-bit, and 'flow control' to none. (**Hint:** In Tera Term, you can save these serial port settings by selecting 'Setup -> Save setup...' from the file menu. After saving, these serial port settings will be in place every time you launch the Tera Term application.)

Figure 2.6 – Tera Term: Serial Port Set-up Window
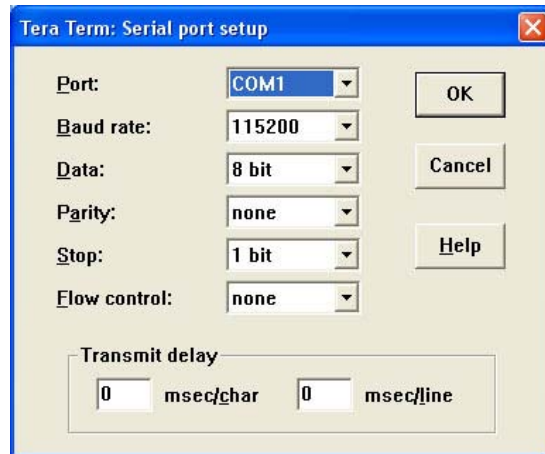
2.5 Power on eXperimenter Kit

The U-Boot bootloader, Linux kernel, and file system is burned to flash memory during manufacturing and provides the necessary commands to interact with the AM3517 SOM-M2 and boot into an operating system.

1. Make sure the development kit is set-up as described in the "Connect Development Kit to PC" Section.
2. Start the terminal program you installed on your PC in the "Terminal Emulation Installation" Section.
3. Verify that the serial port settings are correct. See Figure 2.6.
4. Move the "POWER ON/OFF" switch to the "ON" position to boot the kit.
5. In your PC's terminal emulation program, you should see U-Boot launch. If you press any key before the autoboot countdown finishes, you will receive a U-Boot prompt. Otherwise, U-Boot will automatically launch the Linux kernel.
    Note: A demonstration application that utilizes the 4.3" WQVGA LCD (not included) may be installed in flash memory. The first time the kit is powered on, the application may take approximately two minutes to load as Linux builds the file system. For more information about the demonstration application, please refer to the *Zoom AM3517 Development Kit User Manual*, available on the Logic website: http://support.logicpd.com/downloads/1251/

You are now ready to work with the AM3517 SOM-M2 using the Linux kernel or U-Boot. For information on how to load the board support library (BSL) sample programs, as well as other details about the AM3517 eXperimenter Kit, please refer to the *Zoom AM3517 Development Kit User Manual*: http://support.logicpd.com/downloads/1251/

3 Product Notices

This development kit is intended for use for **ENGINEERING DEVELOPMENT, DEMONSTRATION, OR EVALUATION PURPOSES ONLY** and is not considered by TI and Logic to be a finished end-product fit for general consumer use. Persons handling the product(s) must have electronics training and observe good engineering practice standards. As such, the goods being provided are not intended to be complete in terms of required design-, marketing-, and/or manufacturing-related protective considerations, including product safety and environmental measures typically found in end products that incorporate such semiconductor components or circuit boards. This development kit does not fall within the scope of the European Union directives regarding electromagnetic compatibility, recycling (WEEE), FCC, CE or UL, and therefore may not meet the technical requirements of these directives or other related directives.

ESD

The user assumes all responsibility and liability for proper and safe handling of the goods. Further, the user indemnifies TI and Logic from all claims arising from the handling or use of the goods. Due to the open construction of the product, it is the user's responsibility to take any and all appropriate precautions with regard to electrostatic discharge.

FCC Warning

This development kit is intended for use for **ENGINEERING DEVELOPMENT, DEMONSTRATION, OR EVALUATION PURPOSES ONLY** and is not considered by TI and Logic to be a finished end-product fit for general consumer use. It generates, uses, and can radiate radio frequency energy and has not been tested for compliance with the limits of computing devices pursuant to part 15 of FCC rules, which are designed to provide reasonable protection against radio frequency interference. Operation of this equipment in other environments may cause interference with radio communications, in which case the user at his own expense will be required to take whatever measures may be required to correct this interference.

4 Support & Product Ordering Information

4.1 Documentation and Software Downloads

Logic provides additional documentation and software resources for the Zoom AM3517 eXperimenter Kit. These additional resources are available as downloads from the "My Account" section of the Logic website. Click on the "Log In" link at the top of any www.logicpd.com web page and enter your username and password to access the downloads available for your product.

Additional documentation includes:

+AM3517 SOM-M2 Schematics (.pdf), Layout Files (.pdf), and BOM (.pdf)
+eXperimenter Baseboard Schematics (.pdf & .dsn), Layout Files (.pdf & .max), and BOM (.pdf)
+*Zoom AM3517 Development Kit User Manual*
+*AM3517 SOM-M2 Hardware Specification*
+White Papers, Application Notes, and Product Change Notifications (PCNs) as they become available

4.2 Frequently Asked Questions

Visit www.logicpd.com/product-support for FAQs regarding the Zoom AM3517 eXperimenter Kit and SOMs.

4.3 Technical Discussion Group

Visit www.logicpd.com/product-support to join our Technical Discussion Group (TDG) and share valuable information with other designers. Please note that the TDG site requires its own account creation that is separate from the account for the main Logic website.

4.4 Warranty Statement

Refer to the "Development Kit Important Notice" document enclosed with the Zoom AM3517 eXperimenter Kit for warranty information.

4.5 Additional Support Services Available from Logic

Support Packages for Dedicated Technical Support

Visit www.logicpd.com/product-support for complete descriptions, prices, and purchase options.

Product Development Services

Logic offers innovative product solutions covering every point in the product lifecycle, from product design and engineering to electronic manufacturing services. Please visit our website at www.logicpd.com for more information.

4.6 Product Ordering Information

Zoom AM3517 eXperimenter Kits and AM3517 SOM-M2 modules are available from Logic distributors. Please visit Logic's website for configuration options and ordering information:

+www.logicpd.com/products/development-kits/zoom-am3517-experimenter-kit
+www.logicpd.com/products/system-modules/texas-instruments-am35x-som-m2

4.7 Optional Zoom Display Kits

Zoom Display Kits are ideal for embedded solutions requiring a graphical user interface and are available in different display sizes and resolutions. Zoom Display Kits are sold separately. Contact Logic for other display requirements.

Visit Logic's website at www.logicpd.com/products/display-kits for a complete listing of Display Kits and specifications.

Revision History

REV	EDITOR	REVISION DESCRIPTION	APPROVAL	DATE
A PN 1014508	JCA	+Initial release	JCA	10/29/09

Please check www.logicpd.com for the latest revision of this manual and other documentation.

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