Setup and Configuration of ECM Development Kit

1 Microchip Amazon Machine Image (AMI) Setup

The ECM Development Kit is designed to work with an Amazon Web Service (AWS) server to show how easy it is to connect an embedded product to the cloud. Amazon provides help for their AWS account holders at https://forums.aws.amazon.com/ or paid support at http://aws.amazon.com/premiumsupport/.

1. If you do not have an AWS account with Amazon, go to http://aws.amazon.com and create one.
   
   (a) Please review your company IT policies when working with external services.

2. Once you, or your company, has an AWS account, go to https://aws.amazon.com/marketplace/pp/B00FAX38R4 and launch an instance of the Microchip AMI to connect with your ECM Development Kit.

2 ECM Development Kit Hardware Setup

This section will guide you through the setup needed to commission the ECM Development Kit hardware to work with the Microchip AMI that you just configured.

1. Connect your ECM Development Kit to your local network using an ethernet cable. Your local network needs to have an active internet connection for the demo to work.

2. Apply power to the development kit using either batteries or a mini USB. If you are using batteries, ensure the power switch is set to ‘BAT’ and if you are using USB for power, ensure the switch is on ‘USB’.

3. The board will begin connecting to the local network. While connecting, LED ‘D6’ will be lit and LEDs ‘D1’ through ‘D4’ will flash counter-clockwise.

4. Once the ECM Development Kit is connected, LED ‘D5’ will begin flashing indicating the board is ready to be commissioned.

5. Connect your computer to the local network that the development kit is connected to.

6. Open a web browser. Enter in the URL bar “xxxxxx_ecm.local” where “xxxxxx” is the last six characters of your development kit’s MAC address. The UUID can be found labeled on the board (Do not include the colons [::]).
   
   Note: Windows users must have an mDNS service discovery program installed such as Bonjour for Windows (Developed by Apple). Linux users can use Avahi, and Mac OS X users will have native Bonjour support. If not installed the DNS will not resolve. Alternatively you can type in the IP address issued (if known) to the ECM Development Kit by your local network.

7. This URL will bring up the ECM Development Kit Configuration Webpage where you can enter the address of your Microchip AMI.

8. In the “Server Address:” box, enter the server address for your Microchip AMI. The server address should include “https://” at the beginning, for example: “https://www.example.com”. The server address can also be an IP address such as “https://198.51.100.25”.

9. Once a valid server address is entered, click the “Join” button.
   
   Note: If an invalid server address is entered an error prompt will appear asking to enter a valid server address.

10. A reconnection page will be displayed showing the server address that you entered as well as the development kit’s UUID. Ensure that the information is correct.

11. Your ECM Development Kit will now communicate to the Microchip AMI server address you entered.
3 Using the Demo

Now that all of the setup is compete, the following items will allow you to use the demo. The current Microchip AMI supports both the ECM Development Kit and the WCM Development Kit. The text on the Microchip AMI will only reference the WCM Development Kit however, this will be changed in a future release to show support for our other development kits.

1. Connect your computer or mobile device to the internet and open a web browser and enter the server address you used above to connect to the Microchip AMI running on AWS.
   Note: The Microchip AMI is using a self-signed certificate for SSL authentication, you may have to confirm the security exception.

2. The Microchip AMI will prompt you for the WCM Development Kit UUID, this is the last 6 characters of the devices MAC address that is labeled on the board as well as displayed on the reconnection webpage. Enter this UUID into the box labeled ‘WCM DK1 UUID’ and click ‘Set UUID’.
   Note: Cookies must be enabled in your browser!

3. Ensure that the ECM Development Kit is powered on and configured (see 2 ECM Development Kit Hardware Setup). Once the board is connected, you can press, and hold, any of the buttons on the demo and it will change the status of the corresponding button indicators on the Microchip AMI you created.

4. Clicking the LED buttons on the Microchip AMI you created will change the status of the LEDs on the ECM Development Kit board.

5. Changing the potentiometer on the board will change the value seen on the website.

6. To clear the server address from the board’s non-volatile memory, hold ‘S2’ and ‘S3’ while powering up the board. This will allow you to enter a different server address for the ECM Development Kit.

To provide feedback to the user the two blue LEDs(D5 and D6) at the top of the board are used to indicate status of the demo. Please use the table below to interpret the diagnostic codes reported by the ECM Development Kit when these or other LEDs are illuminated.

<table>
<thead>
<tr>
<th>D7</th>
<th>D6</th>
<th>D5</th>
<th>D4</th>
<th>D3</th>
<th>D2</th>
<th>D1</th>
<th>Diagnostic Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>0</td>
<td>F</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Configuration Mode: Need to configure</td>
</tr>
<tr>
<td>-</td>
<td>F</td>
<td>F</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Connected to AP</td>
</tr>
<tr>
<td>-</td>
<td>1</td>
<td>0</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>Associating to AP</td>
</tr>
<tr>
<td>-</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>Server Connection Issue, no internet found</td>
</tr>
<tr>
<td>-</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>Router Connection Failed</td>
</tr>
<tr>
<td>-</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>No Record for UUID</td>
</tr>
<tr>
<td>-</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Database Issue</td>
</tr>
<tr>
<td>-</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>DNS Can’t Be Resolved</td>
</tr>
<tr>
<td>-</td>
<td>F</td>
<td>0</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Normal Operation: D6 flashes each message transmission</td>
</tr>
<tr>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Battery Voltage Low</td>
</tr>
</tbody>
</table>

F = Flashing, C = Rotating in a counter clockwise pattern,
- = Don’t care, 0 = Off, and 1 = On

Table 1: Diagnostic Codes
# Setup and Configuration of ECM Development Kit

## Revision History

<table>
<thead>
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<th>Revision</th>
<th>Date</th>
<th>Author(s)</th>
<th>Description</th>
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<td>1.0.0</td>
<td>2015-08-10</td>
<td>DC</td>
<td>Initial Release of Document</td>
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