

	Manufacturing Process Instructions	Document Number: MPI 05855 Revision: B
	Micro SD card SMC kernel installer with Optional Crypto	

REVISION HISTORY			
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1 PURPOSE

This document outlines how to use the micro SD card SMC kernel installer (06003) to load a kernel onto a SD card. Depending on the way the card is prepared, the XDATA partition may be encrypted; in that case, the correct passphrase (generated through the procedure) will be need in order access the content.

2 SCOPE

This procedure applies to all applicable kernel versions structured with 05856 (for example, 05858-XX)

3 RESPONSIBILITIES

It is the responsibility of manufacturing technicians and engineers to test and record measured data per the procedures outlined in this document. Any measurement logs will be kept for future use. Storage of the passphrase and how it gets communicated to the end user is beyond the scope of this procedure.

4 REFERENCES

N/A

5 REQUIRED MATERIALS AND EQUIPMENT

A Windows PC loaded with Ubuntu Linux in a virtual environment like VMWare or a PC running Ubuntu Linux natively; the user must have administrative rights via sudo

A Linux-compatible micro-SD card programmer attached to the PC

An applicable micro-SD card of at least 4Gb (for example, 01366 "MICRO SD CARD, 16 GB")

For SD card programmers that work only with full-sized SD cards, an interface carrier may be required

The installation script, 06003 "SW, MICRO SD CARD SMC KERNEL INSTALLER"

6 SAFETY REQUIREMENTS

TBD

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7 PROCEDURE

7.1 Setup of Tools on Ubuntu

7.1.1 Copy the installation script (06003) into a new Ubuntu directory (~/.06003) and decompress it from command prompt:

```
mkdir ~/.06003
tar xf 06003_REV_A.tar.bz2 -C ~/.06003
```

The “makecard_3” script is extracted.

7.1.2 Install the *cryptsetup* to support encrypted partitions (one-time setup):

```
sudo aptitude install cryptsetup
```

7.1.3 Determine the name of the device associated with the micro-SD card programmer. Devices are mounted under the “/dev” directory and are usually named as “/dev/sd” followed by a single character; for example, “/dev/sdf”

If you are unsure about the name, get a listing of the SD card devices (`ls /dev/sd*`) before installing the programmer, and then again afterward. The correct device name appears in the second listing, but not the first.

7.1.4 Copy the software installation setup script to a new Ubuntu directory. For example, if the kernel part number is 05858-01, you might store the setup script under ~/.05858-01

7.1.5 Make the setup script executable:

```
chmod +x ~/.05858-01/05858-01_REV_A.sh
```

7.1.6 Execute the setup script:

```
~/.05858-01/05858-01_REV_A.sh
```

The setup script prompts for the destination directory; you can re-use the kernel directory, `/home/user-name/05858-01`

7.2 Make a Card with No Encrypted Partitions (**overwrites all data on the SD card**)

7.2.1 Insert the micro-SD card (and carrier, if applicable) into the programmer.

7.2.2 Run the ‘makecard_3’ script. The generic form of the script is:

```
sudo ~/.06003/makecard_3 device-name kernel-bootloader-dir kernel-dir
```

For example:

```
sudo ~/.06003/makecard_3 /dev/sdf ~/.05858-01/dm3730_zoom_torpedo/bootloader
~/.05858-01/dm3730_zoom_torpedo
```

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The partition table is re-written and the root filesystem is reloaded. Even if the display stops and waits a long time (perhaps 5 minutes or more), do not remove the micro-SD card or stop the script before it exits to the Ubuntu command prompt.

Note that when the SD card is first used, the only user is **root** and there is no password.

7.3 Make a Card with Encrypted XDATA Partition (*overwrites all data on the SD card*)

7.3.1 Insert the micro-SD card (and carrier, if applicable) into the programmer.

7.3.2 Run the 'makecard_3' script. The generic form of the script with encryption is:

```
sudo ~/06003/makecard_3 -c - device-name kernel-bootloader-dir kernel-dir
```

In this case, the XDATA partition will be encrypted using a randomly-generated passphrase that *must be saved* if it is to be used afterward. Pipe the output of the command as follows to save the passphrase; for example:

```
sudo ~/06003/makecard_3 -c - /dev/sdf ~/05858-01/dm3730_zoom_torpedo/bootload  
er ~/05858-01/dm3730_zoom_torpedo 2>&1 | tee saved-passphrase.txt
```

The partition table is re-written and the root filesystem is reloaded. Even if the display stops and waits a long time (perhaps 5 minutes or more), do not remove the micro-SD card or stop the script before it exits to the Ubuntu command prompt.

Note that when the SD card is first used, the only user is **root** and there is no password.

The saved passphrase can be found by looking through the output or by searching with grep:

```
mike@mikeVB:~$ grep 'Generated passphrase' saved-passphrase.txt  
Generated passphrase = PLvzxBhekr5BTav6fp27CuBuXUjYONS6ow0xPiowRUV
```

Record the saved passphrase for use when installing the application and in production use.

END OF PROCEDURE