

## **AS9888 Daemon Operation Manual Version 1.0.0.823**

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## Run dmtdd

### 1. Command line options

Following command line options are available.

- m: Specify layout. This option is used with layout number, e.g. -m 1
- s: Console mode.
- f: Force execute FST.
- z: Enable debug output. This option is used with debug output flags, e.g. -z 0x200

#### 1.1. Layout option

Layout number is passed to AKEC\_Direction function. Please refer “ALSEN\_API\_Manual”, section 7.2.1, for more detail.

#### 1.2. Console mode

When this option is specified, application menu will be shown on your terminal.

#### 1.3. FST mode

When this option is specified, FST is executed and generate as9888.img file.

Please notice that FST (specified with -f) should be executed while the device is keeping horizontal and stable (i.e. don't move the device).

#### 1.4. Debug output

Debug output flags are defined as follows. Please refer “DMTCommon.h” for more detail.

- 0x001: Enable “Data Ready” interrupt message.
- 0x002: Enable “Temperature” interrupt message.
- 0x004: Enable “Pedometer” interrupt message.
- 0x008: Enable “METs” interrupt message.
- 0x010: Enable “Motion” interrupt message.
- 0x040: Enable “Posture” interrupt message.
- 0x080: Enable “High-Low” interrupt message.
- 0x100: Enable Initialize message.
- 0x200: Enable Magnetic field/Acceleration sensor vector.
- 0x400: Enable FST detail message.
- 0x800: Enable Magnetic driver Read/Write monitor.

## 2. Generate as9888.img file (only first time)

dmtd program need as9888.img file. If this file does not exist, program will quit immediately. This file contains the value, which is calculated from EEPROM value and current posture. Therefore, this file has to be created by program at first. To create this file, launch dmtd program with “-f” option.

```
# dmtd -m 1 -s -f
```

## 3. Debugging (sysfs)

When as9888 device driver is compiled with “AS9888\_DEBUG\_IF=1”, debug interfaces are available under sysfs attributes.

### **reset**

Reset the device. If 0 is written, software reset is done. Otherwise hardware reset is done (If RSTN pin is connected to GPIO port of the CPU).

### **mode**

Set mode value to MS register.

### **bdata**

Get measurement buffer data. Please notice that this command prints buffered data which are get by IRQ routine, not physical register value.

### **e2p**

Get EEPROM value. These values are read from actual EEPROM.

### **reg**

Read value from specified register. Firstly, write register address, and then read this file. For example, read data from address 0x00:

```
# echo 0x00 > /sys/class/compass/as9888/reg
# cat /sys/class/compass/as9888/reg
0x48
```

## 4. Debugging (Console Mode)

dmtd is able to outputs debug information to “stdout”. To enable the function, modify build configuration, and then re-compilation is required.

```
$vi $MYDROID/external/as9888/Android.mk
# Remove '#' from following line
#LOCAL_CFLAGS += -DENABLE_DMTDEBUG=1
#LOCAL_CFLAGS += -DOUTPUT_STDOUT=1
#LOCAL_CFLAGS += -DDBG_LEVEL=2
```

To enable magnetic sensor and orientation sensor, set the following values to sysfs attributes.

```
echo 1 > /sys/class/compass/as9888/enable_mag
echo 1 > /sys/class/compass/as9888/enable_ori
echo 100000000 > /sys/class/compass/as9888/delay_mag
echo 100000000 > /sys/class/compass/as9888/delay_ori
```

To run as9888 as console mode, add ‘-s’ option.

```
dmtd -s
```

When ‘-z’ option is added, you can switch on/off the each debug data, which is defined by DMTDATA.

In the following example, debug output of magnetometer’s driver and accelerometer’s driver are enabled.

```
dmtd -s -z 0x30
```

Debug output function may effect to the performance of dmtd program, so it is strongly recommended to disable debug output when the program is released for commercial products.