

# Event Monitor Application Note

80000ST10028a Rev.2 – 2010-10-04



## APPLICABILITY TABLE

PRODUCT
GT863-PY
GT864-QUAD
GT864-PY
GM862-QUAD-PY
GM862-QUAD
GM862-GPS
GC864-PY
GC864-QUAD
GC864-PY w/ SIM holder
GC864-DUAL
GE863-PY
GE863-QUAD
GE863-GPS
GE863-SIM
GE863-PRO <sup>3</sup>
GE864-PY
GE864-QUAD
GE864-QUAD V2
GE864-DUAL V2
GE864-QUAD AUTOMOTIVE
GE864-QUAD AUTOMOTIVE V2
GE864-QUAD ATEX
GE865-QUAD
GL865-DUAL



**Event Monitor Application Note**  
80000ST10028a Rev. 0 – 2009-05-07

**SW Version**

7.03.02 / 7.02.07

10.0x.xx2



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## 1. Introduction

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### 1.1. Contact Information, Support

For general contact, technical support, to report documentation errors and to order manuals, contact Telit Technical Support Center (TTSC) at:

[TS-EMEA@telit.com](mailto:TS-EMEA@telit.com)  
[TS-NORTHAMERICA@telit.com](mailto:TS-NORTHAMERICA@telit.com)  
[TS-LATINAMERICA@telit.com](mailto:TS-LATINAMERICA@telit.com)  
[TS-APAC@telit.com](mailto:TS-APAC@telit.com)

Alternatively, use:

<http://www.telit.com/en/products/technical-support-center/contact.php>

For detailed information about where you can buy the Telit modules or for recommendations on accessories and components visit:

<http://www.telit.com>

To register for product news and announcements or for product questions contact Telit Technical Support Center (TTSC).

Our aim is to make this guide as helpful as possible. Keep us informed of your comments and suggestions for improvements.

Telit appreciates feedback from the users of our information.



## 1.2. Text Conventions



**Danger – This information MUST be followed or catastrophic equipment failure or bodily injury may occur.**



***Caution or Warning – Alerts the user to important points about integrating the module, if these points are not followed, the module and end user equipment may fail or malfunction.***



**Tip or Information – Provides advice and suggestions that may be useful when integrating the module.**

All dates are in ISO 8601 format, i.e. YYYY-MM-DD.

## 1.3. Related Documents

- AT Commands Reference guide, 80000ST10025a

## 1.4. Document History

Revision	Date	Changes
ISSUE#0	2009-08-28	Release First ISSUE# 0
ISSUE #1	2010-05-07	Added note on alerts section Added note regarding STARTUP event on alerts section
ISSUE#2	2010-10-04	Added GL865-DUAL to the applicability table





## 2. EVENT MONITOR

### 2.1. Description

This service allows an user to associate an AT command to a specified event monitored from the module.

The EVENT MONITOR service is configured and enabled by the following commands:

**AT#ENAEVMONICFG=3,1,2**      // the service is configured to run on the third  
// instance, the unsolicited is enabled and the  
// timeout for the response to the AT commands  
// is set to 2 minutes

**AT#ENAEVMONI=1**      // the service is enabled

At this point one or more events can be configured and enabled. The available events are the following:

VBATT	Battery voltage threshold drop
DTR	Data Terminal Ready signal status monitoring
ROAM	Network roaming state
CONTDEACT	GPRS context deactivation
RING	Call rings number
STARTUP	Module start-up (with or without SIM)
REGISTERED	Network registration (to home network or in roaming) after the start-up and the SMS ordering
GPIOx (with x = 1,2,3,4,5)	GPIO pin status monitoring
ADCH1	ADC pin voltage threshold exceeding
ADCL1	ADC pin voltage threshold drop





### 2.1.1. Battery voltage drop

If the event to monitor is the battery voltage drop, then the parameters to configure are:

- Voltage threshold  
**AT#EVMONI="VBATT",0,1,400** //the threshold of 4 is set
- Time interval (in seconds) after that, if the voltage keeps being below the threshold, the AT command is issued  
**AT#EVMONI="VBATT",0,2,10** //the interval of 10 seconds is set
- AT command to issue when the threshold drop is permanent  
**AT#EVMONI="VBATT",0,0,"AT#CMGS=+39346XXXXX,\22Battery low\22"**  
// an SM will be sent to the number +39346XXXXX containing  
// the text *Battery low*

The voltage battery monitoring is enabled issuing the following command:

**AT#EVMONI="VBATT",1**

(The enabling can be set also setting to 1 the second AT command parameter during one of the above 3 configurations)

### 2.1.2. DTR signal status

If the event to monitor is the DTR signal status, then the parameters to configure are:

- Signal status: "high" or "low"  
**AT#EVMONI="DTR",0,1,1** //the status to monitor is the "high" one
- Time interval (in seconds) after that, if the DTR signal status keeps being, the AT command is issued  
**AT#EVMONI="DTR",0,2,50** //the interval of 50 seconds is set
- AT command to issue when the DTR signal status drop is permanent  
**AT#EVMONI="DTR",0,0,"AT#CMGS=+39346XXXXX,\22DTR high\22"**  
//an SM will be sent to the number +39346XXXXX containing the text *DTR high*



The DTR signal status monitoring is enabled issuing the following command:

**AT#EVMONI="DTR",1**

(The enabling can be set also setting to 1 the second AT command parameter during one of the above 3 configurations)

### 2.1.3. Network roaming state

If the event to monitor is the network roaming state, then the parameter to configure is:

- AT command to issue when the network roaming state is happened  
**AT#EVMONI="ROAM",0,0,"AT#CMGS="+39346XXXXX,\22Roaming\22"**  
//an SM will be sent to the number +39346XXXXX containing the text *Roaming*

The network roaming state monitoring is enabled issuing the following command:

**AT#EVMONI="ROAM",1**

(The enabling can be set also setting to 1 the second AT command parameter during the above configuration)

### 2.1.4. GPRS context deactivation

If the event to monitor is the GPRS context deactivation, then the parameter to configure is:

- AT command to issue when the GPRS context is deactivated  
**AT#EVMONI="CONTDEACT",0,0,"AT#CMGS="+39346XXXXX,\22Context deactivation\22"**  
//an SM will be sent to the number +39346XXXXX containing the text *Context deactivation*

The GPRS context deactivation monitoring is enabled issuing the following command:

**AT#EVMONI="CONTDEACT",1**

(The enabling can be set also setting to 1 the second AT command parameter during the above configuration)



## 2.1.5. Call rings number

If the event to monitor is the call rings number, then the parameters to configure are:

- Call rings number  
**AT#EVMONI="RING",0,1,5** //the call rings to count are 5
- AT command to issue when the set call rings number is reached  
**AT#EVMONI="RING",0,0,"AT#CMGS="+39346XXXXX,\22call rings\22"**  
//an SM will be sent to the number +39346XXXXX containing the text *call rings*

The call rings number monitoring is enabled issuing the following command:

**AT#EVMONI="RING",1**

(The enabling can be set also setting to 1 the second AT command parameter during one of the above 2 configurations)

## 2.1.6. Module start-up

If the event to monitor is the module start-up, then the parameter to configure is:

- AT command to issue when the module start-up (with or without SIM) is happened  
**AT#EVMONI="STARTUP",0,0,"AT#CMGW="+39346XXXXX,\22module start-up\22"**  
//an SM will be stored containing the text *module start-up*

The module start-up monitoring is enabled issuing the following command:

**AT#EVMONI="STARTUP",1**

(The enabling can be set also setting to 1 the second AT command parameter during the above configuration)



## 2.1.7. Network registration

If the event to monitor is the network registration, then the parameter to configure is:

- AT command to issue when the module has been registered to home network or in roaming after the start-up

**AT#EVMONI="REGISTERED",0,0,"AT#CMGS="+39346XXXXX,\22module registered\22"**  
//an SM will be sent to the number +39346XXXXX containing the text *module registered*

The network registration monitoring is enabled issuing the following command:

**AT#EVMONI="REGISTERED",1**

(The enabling can be set also setting to 1 the second AT command parameter during the above configuration)

## 2.1.8. GPIO pin status monitoring

There is the possibility to monitor the status of up till 5 different GPIO pins: the 5 different events are selected using the 5 labels GPIO1, GPIO2, GPIO3, GPIO4 and GPIO5 as first parameter of #EVMONI command. The parameters to configure are:

- GPIO pin to monitor  
**AT#EVMONI="GPIO1",0,1,4** //the GPIO pin 4 is set for the event "GPIO1"
- GPIO pin status: "high" or "low"  
**AT#EVMONI="GPIO1",0,2,1** //the GPIO pin status to monitor is the "high" one
- Time interval (in seconds) after that, if the GPIO pin status keeps being, the AT command is issued  
**AT#EVMONI="GPIO1",0,3,5** //the interval of 5 seconds is set
- AT command to issue when the threshold drop is permanent  
**AT#EVMONI="GPIO1",0,0,"AT#CMGS="+39346XXXXX,\22GPIO 4 high\22"**  
//an SM will be sent to the number +39346XXXXX containing the text *GPIO 4 high*

The GPIO pin status monitoring is enabled issuing the following command:

**AT#EVMONI="GPIO1",1**

(The enabling can be set also setting to 1 the second AT command parameter during one of the above 4 configurations)



### 2.1.9. ADC pin voltage threshold exceeding

If the event to monitor is the ADC pin voltage threshold exceeding, then the parameters to configure are:

- ADC pin to monitor  
**AT#EVMONI="ADCH1",0,1,2** //the ADC pin 2 is set
- Voltage threshold  
**AT#EVMONI="ADCH1",0,2,1500** //the threshold of 1500 mV is set
- Time interval (in seconds) after that, if the voltage keeps being above the threshold, the AT command is issued  
**AT#EVMONI="ADCH1",0,3,10** //the interval of 10 seconds is set
- AT command to issue when the threshold exceeding is permanent  
**AT#EVMONI="ADCH1",0,0,"AT#CMGS="+39346XXXXX,"22ADC pin 2 high\22"**  
//an SM will be sent to the number +39346XXXXX containing the text *ADC pin 2 high*

The ADC pin voltage threshold exceeding monitoring is enabled issuing the following command:

**AT#EVMONI="ADCH1",1**

(The enabling can be set also setting to 1 the second AT command parameter during one of the above 4 configurations)

### 2.1.10. ADC pin voltage threshold drop

If the event to monitor is the ADC pin voltage threshold DROP, then the parameters to configure are:

- ADC pin to monitor  
**AT#EVMONI="ADCL1",0,1,2** //the ADC pin 2 is set
- Voltage threshold  
**AT#EVMONI="ADCL1",0,2,500** //the threshold of 500 mV is set
- Time interval (in seconds) after that, if the voltage keeps being below the threshold, the AT command is issued  
**AT#EVMONI="ADCL1",0,3,10** //the interval of 10 seconds is set



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- AT command to issue when the threshold drop is permanent  
**AT#EVMONI="ADCL1",0,0,"AT#CMGS=+39346XXXXX,\22ADC pin 2 low\22"**  
//an SM will be sent to the number +39346XXXXX containing the text *ADC pin 2 low*

The ADC pin voltage threshold drop monitoring is enabled issuing the following command:

**AT#EVMONI="ADCL1",1**

[The enabling can be set also setting to 1 the second AT command parameter during one of the above 4 configurations]

## 2.2. Requirements

- When the EVENT MONITOR service is enabled setting to 1 the parameter <mod> of the AT command #ENAEVMONI, then the AT instance specified by the parameter <muxInstance> of the AT command #ENAEVMONICFG is reserved to run the AT commands associated to the monitored event
- If the EVENT MONITOR service is disabled setting to 0 the parameter <mod> of the AT command #ENAEVMONI, then the used AT instance is returned to the previous user, if there is
- The <mod> of the AT command #ENAEVMONI and <muxInstance> parameter of the AT command #ENAEVMONICFG are stored in the NVM. At boot, if the <mod> parameter is set to 1, then the AT instance specified in the <muxInstance> is automatically reserved to run the AT commands associated to the monitored event







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**ALERTS:**

When an AT instance is reserved for the EVENT MONITOR service, then every other request to use it, coming from other services, is refused: only the OTA service can subtract the AT instance reserved to EVENT MONITOR service.

The AT command to issue when an event has been happened, has to be set with a string starting with the 2 characters AT (or at). After the “AT” string there are the commands (for example: AT+CGMR;+CGSN). The maximum length of AT command string is 96 characters. If the string contains the character “”, then it has to be replaced with the 3 characters \22.

If the AT command +CFUN=0 is associated to the DTR event, it has effect only if the corresponding URC (see command #ENAEVMONICFG) is disabled

If the GPIO pin direction is set to 2, i.e. “Alternate Functions”, (see command #GPIO), the GPIO pin status cannot be monitored, because it has no meaning.

The commands that enter in online mode connection (like #SD, #FTPGET, #FTPPUT, and so on) have to be avoided because they cause a block of the EVMONI mechanism until the module reboots after timeout set with AT#ENAEVMONICFG command expires.

When the module powers on in alarm mode, the STARTUP event is not triggered. The AT command AT#WAKE has to be issued to enter the normal operating mode and to trigger the STARTUP event.

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