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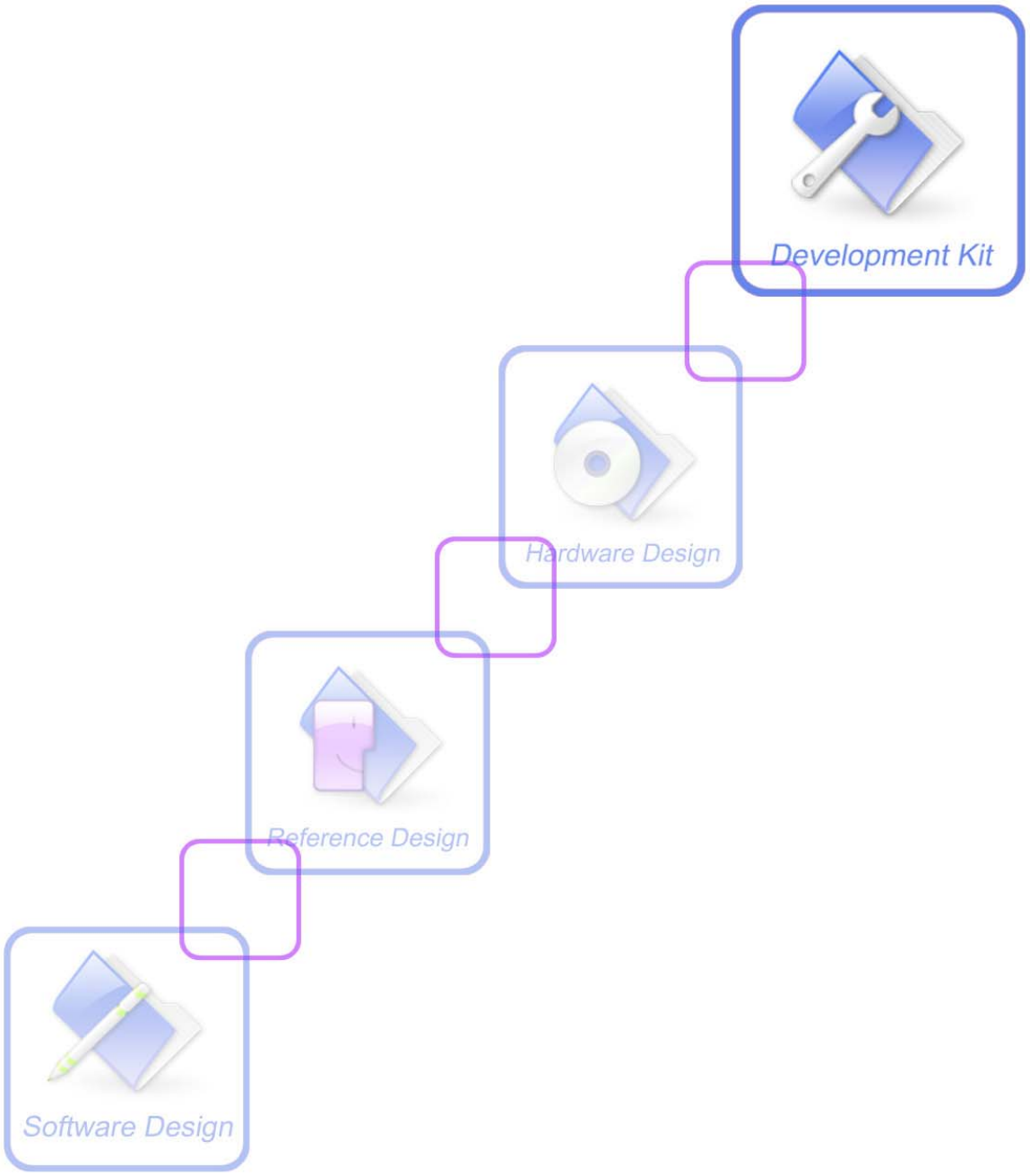
SIM900_JD_Application Note_V1.04



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Version history

Date	Version	Description of change	Author
2011-6-17	1.00	Origin	wangzhengning
2012-5-14	1.01	Add PIN definition	wangzhengning
2012-9-18	1.02	Modify AT+SJDR Read Command	zhangyunduan
2012-9-28	1.03	Modify var value area	zhangyunduan
2014-04-17	1.04	Added AT+SJDEDV command	Chenyang

SCOPE

This document describes how to use the Jamming Detection function of SIM900 through AT commands.
Examples are also given for reference. This document can be used for SIM900 serial modules, like SIM900 and SIM900D

This document is subject to change without notice at any time.

1. AT COMMAND

Jamming detection can be set or activated by SJDR command.

1.1 AT+SJDR

AT+SJDR	
Read Command **AT+SJDR?**	Response **+SJDR: <status>** or **+SJDR: <status>,<mode>,<var>,<display>,<result>** **OK**
	Parameters See Write Command
Write Command Enable jamming detection **AT+SJDR=<status>,<mode>[,<var>[,<display>]]** Close jamming detection **AT+SJDR=0**	Response **OK** **ERROR** If error is related to ME functionality: **+CME ERROR: <err>**
	Unsolicited result codes supported: **+SJDR: NO JAMMING** or **+SJDR: JAMMING DETECTED** or **+SJDR: INTERFERENCE DETECTED**
	Parameters **<status>** 0: disable jamming detection 1: enable jamming detection **<mode>** 0: should inquire status by reading command; 1: only report jamming status via URC from serial port; 2: only report jamming status via the PIN; 3: report jamming status via URC as well as the PIN.

	<var>	The threshold to separate "+SJDR: JAMMING DETECTED" from "+SJDR: INTERFERENCE DETECTED" (while the signal strength variance is higher than <var>, there could be industrial interferences, and "+SJDR: INTERFERENCE DETECTED" is reported). 1-255(default value:255)
	<display>	1: report jamming status via URC when jamming status changed.(only when <mode> is set to "1" or "3") 0: report jamming status via URC every 3000ms. (only when <mode> is set to "1" or "3")
Reference	Note ● When you query jamming detection status after enable jamming detection mode, you will get the URC of the format below: +SJDR:1,<mode>,<var>,<display>,<result> <result>=0, means no jamming. <result>=1, means jamming is detected. <result>=2, means industrial interference is detected. ● "+SJDR: INTERFERENCE DETECTED" indicates industrial interference which signifies unintentional radio link disturbances by strong industrial radio sources.	

PIN Definition

A PIN is designed to indicate jamming by outputting different level. When jamming is detected, the PIN will output a high level, otherwise, it will output a low level. Refer to the table below to know the predefined PIN for different type of module.

Module Type	**Defined PIN**
SIM900/SIM900A/SIM900R/SIM900L	PIN68
SIM900B	PIN34
SIM900D	PIN40
SIM908	PIN33

Example：

Disable Jamming detection:

AT+SJDR=0 //Switch off jamming detection

OK

AT+SJDR? //Query current status

+SJDR:0 // Jamming detection is disabled currently

Enable Jamming detection:

In mode 0

AT+SJDR=1,0 //Enable jamming detection, the status can be only queried by reading command.

OK

in a jamming environment

AT+SJDR? //Query status

+SJDR:1,0,255,0,1 //Jamming is detected

in normal condition

AT+SJDR? //Query status

+SJDR:1,0,255,0,0 //No jamming

In mode 1

AT+SJDR=1,1 //Enable jamming detection, the status will be reported via URC periodically

OK

The URC will be reported automatically every 3 seconds

+SJDR: JAMMING DETECTED //Jamming is detected

…

+SJDR: NO JAMMING //No jamming

…

+SJDR: INTERFERENCE DETECTED //Interference is detected

…

+SJDR: NO JAMMING //No jamming

…

AT+SJDR=1,1,255,1 //Enable jamming detection, the threshold is 255, and the URC is reported only when jamming status is changed.

The URC will be reported automatically only when the status changed

+SJDR: JAMMING DETECTED //Jamming is detected

+SJDR: NO JAMMING //No jamming

+SJDR: JAMMING DETECTED //Jamming is detected

+SJDR: NO JAMMING //No jamming

+SJDR: INTERFERENCE DETECTED //Interference is detected

+SJDR: NO JAMMING //No jamming

+SJDR: INTERFERENCE DETECTED //Interference is detected

AT+SJDR=1,1,255,0 //Enable jamming detection, the threshold is 255, and the URC is reported every 3000ms.

The URC will be reported automatically every 3 seconds

+SJDR: JAMMING DETECTED //Jamming is detected
…
+SJDR: NO JAMMING //No jamming
…
+SJDR: INTERFERENCE DETECTED //Interference is detected
…
+SJDR: NO JAMMING //No jamming
…

Note:

In mode 2 and mode 3

- If you set “AT+SJDR=1,2”, you need to check the status of the PIN to get the jamming result.
- If you set “AT+SJDR=1,3”, the jamming would be indicated through not only serial port but also the PIN.

1.2 AT+SJDEDV

AT+SJDEDV	
Test Command **AT+SJDEDV=?**	Response **+SJDEDV: (2-200),(2-200)** **OK**
Read Command **AT+SJDEDV?**	Response **+SJDEDV: <in edv>,<out_edv>**

	OK
	Parameters See Write Command
Write Command **AT+SJDEDV=<in_edv>,<out_edv>**	Response **OK** **ERROR** If error is related to ME functionality: **+CME ERROR: <err>**
	Parameters **<in_edv>** Detect the situation that match the jamming condition, the default value is 8. **<out_edv>** Detect the situation that match No jamming condition, the default value is 4.
Reference	Note The less <in_dev> and <out_edv>, the faster detecting speed, but with a higher false detection rate. The bigger <in_dev> and <out_edv>, the slower detecting speed, but with a lower false detection rate.

Contact us:

Shanghai SIMCom Wireless Solutions Ltd.

Add: Building A, SIM Technology Building, No.633 Jinzhong Road, Changning District, Shanghai, P. R. China 200335

Tel: +86 21 3252 3300

Fax: +86 21 3252 3020

URL: www.sim.com/wm