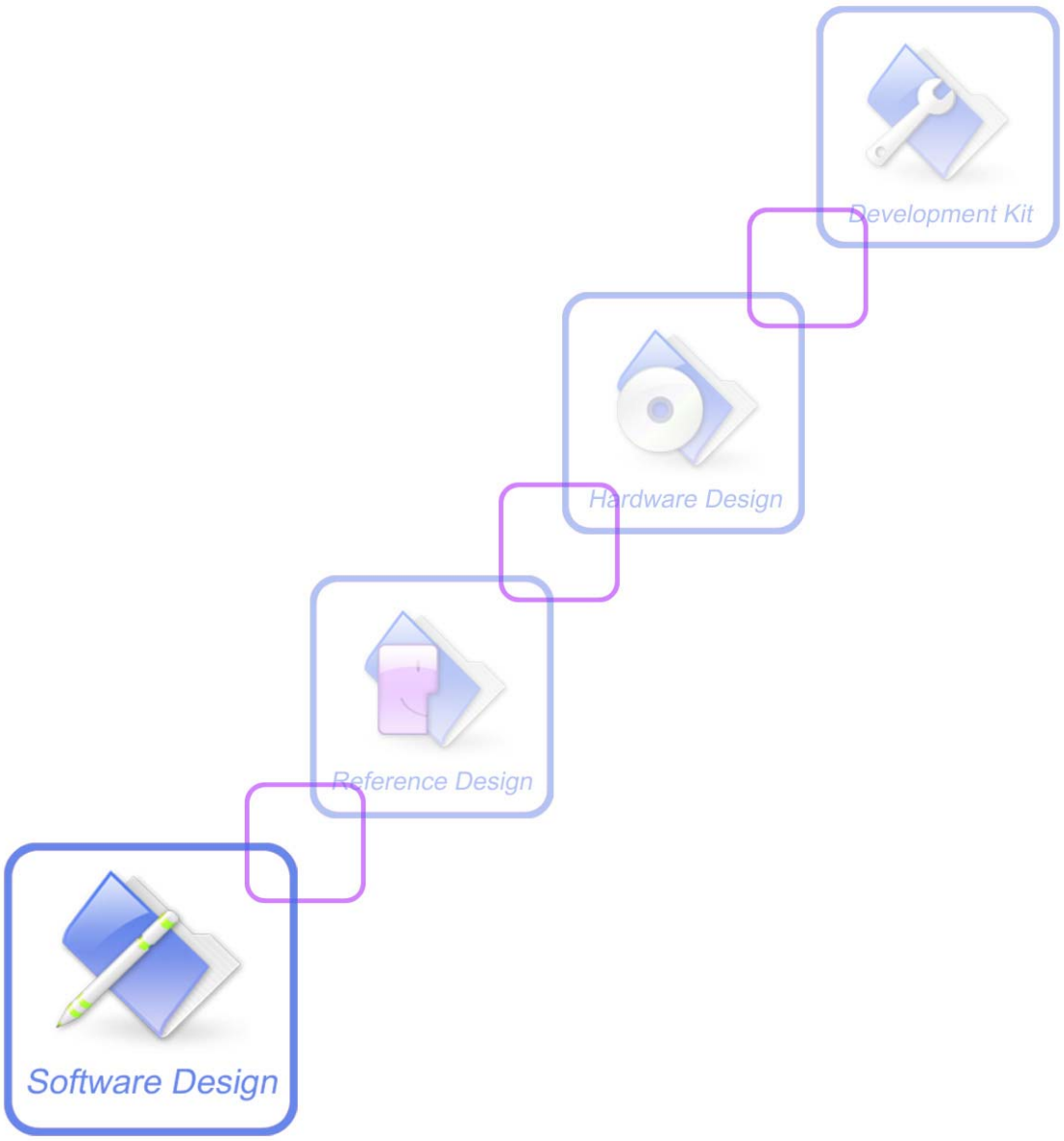
SIM900_TTS_Application Note_V1.05



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Version History

Date	Version	Description of change	Author
2011-10-08	V1.00	Origin	Jay_Hu
2012-10-11	V1.01	Add CTTSPARAM	Jay_Hu
2013-06-08	V1.02	Support Italian TTS	Liang.Gao
2013-12-09	V1.03	Add CTTSPAUSE	Liang.Gao
2014-03-28	V1.04	Add CTTSMUTEMIC, modify CTTSPARAM	Liang.Gao
2014-09-09	V1.05	Add CTTSHF	Liang.Gao

Scope

This document describes how to use TTS (Text To Speech) functions of SIM900 through AT commands. Examples are also given for reference. This document can be used for SIM900 series modules, but this function needs special module and FW to be supported.
For the detail, please help to contact with SIMCom.

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

1. TTS related AT commands

1.1 AT+DTAM Set Local or Remote Audio Play

AT+DTAM Set Local or Remote Audio Play	
Read Command **AT+DTAM?**	Response **+DTAM: <mode>** **OK**
	Parameter See Write Command
Write Command **AT+DTAM=<mode>**	Response **OK**
	Parameter **<mode>** 0 Play audio locally (Default value) 1 Play audio remotely
Reference	● Not all the SIM900 serial modules support this command.

1.2 AT+CTTS TTS Operation

AT+CTTS TTS Operation	
Test Command **AT+CTTS=?**	Response **OK**
	No prameter
Read Command **AT+CTTS?**	Response **+CTTS: <status>** **OK**
	Parameter **<status>** 0 idle mode 1 play mode
Write Command **AT+CTTS=<mode>,<text>**	Response if<mode>=0, response: **OK**

	if<mode>=1 or 2 or 3, response: **OK** **+CTTS:0** *//speech palyed over* If error is related to MS functionality, response: **+CME ERROR: <err>**
	Parameter **<mode>** 0 Stop playing speech. 1 Start to play synthetic speech; <text> is in **UCS2** coding format. 2 Start to play synthetic speech; <text> is in **ASCII** coding format. Chinese text is in **GBK** coding format. 3 Start to play synthetic speech; <text> is in **Italian**. **<text>** The text which is synthetized to speech to be played. If <mode>=1, maximum data length is 540 Bytes; if <mode>=2, maximum data length is 270 Bytes; if <mode>=3, maximum data length is 250 Bytes;
Reference	Note Not all the SIM900 modules support Italian.

1.3 AT+CTTSPARAM Set TTS Parameters

AT+CTTSPARAM Set TTS Parameters	
Test Command **AT+CTTSPARAM=?**	Response **+CTTSPARAM: (0-2),(0-3),(0-3),(0-2),(0-2),(0-1),(0-1)** **OK**
	No parameter
Read Command **AT+CTTSPARAM?**	Response **+CTTSPARAM:** **<volume>,<sysvolume>,<digitmode>,<pitch>,<speed>,** **<playover>,<savemode>** **OK**
	Parameters See Write Command

Write Command **AT+CTTSPARAM=<volume>[,<sysvolume>[,<digitmode>[,<pitch>[,<speed>[,<playover>[,<savemode>]]]]]]**	Response **OK** If error is related to MS functionality, response: **+CME ERROR: <err>**
	Parameter **<volume>** TTS volume 0 low volume 1 normal volume (Default value) 2 high volume **<sysvolume>** System volume 0 min volume 1 low volume 2 normal volume (Default value) 3 high volume <**digitmode**> read digital mode 0 auto mode, digital mode is high priority (Default value) 1 auto mode, telegraph mode is high priority 2 telegraph mode 3 digital mode <**pitch**> pitch 0 low pitch 1 normal pitch (Default value) 2 high pitch <**speed**> tone speed 0 slow speed 1 normal speed (Default value) 2 quick speed **<playover>** 0 return +CTTS:0 when finish playing TTS (Default value) 1 return +CTTS:0,1 when finish playing TTS, and return +CTTS:0 later to indicate that the TTS session ends. **<savemode>** 0 forbid running another TTS playing command when playing TTS (Default value) 1 can input less than or equal to 20 TTS playing commands when playing TTS, all the input text will be played by sequence . +CTTS:0 is only returned for one time when all the text playing finished.

Reference	Note ● The parameter <digitmode> is unavailable for Italian TTS version.

1.4 AT+CTTSPAUSE Set Italian TTS Punctuation Pause Time

AT+CTTSPAUSE Set Italian TTS Punctuation Pause Time	
Test Command **AT+CTTSPAUSE=?**	Response **+CTTSPAUSE: (0-1),(“,”,“.”),(150-5000)** **OK**
	No parameter
Read Command **AT+CTTSPAUSE?**	Response **+CTTSPAUSE:** **<flag>,(<punctuation>,<time>),(<punctuation>,<time>)** **OK**
	Parameters See Write Command
Write Command **AT+CTTSPAUSE=<flag>[,<punctuation>,<time>]**	Response **OK** If error is related to MS functionality, response: **+CME ERROR: <err>**
	Parameter **<flag>** Reset/set the punctuation pause time 0 reset all the punctuation pause time to default time 1 set punctuation pause time **<punctuation>** Supported punctuation “,” comma “.” period <**time**> The punctuation pause time
Reference	Note 1. This feature only supports Italian, not support Chinese or English. 2. If there is continues punctuation in the text string, the pause time is the sum of all the punctuations.

1.5 AT+CTTSMUTEMIC Set the Flag if Mute Microphone after Play Italian TTS

AT+CTTSMUTEMIC Set the Flag if Mute Microphone after Play Italian TTS	
Test Command **AT+CTTSMUTEMIC=?**	Response **+CTTSMUTEMIC: (0-1)** **OK**
	No parameter
Read Command **AT+CTTSMUTEMIC?**	Response **+CTTSMUTEMIC: <flag>** **OK**
	Parameters See Write Command
Write Command **AT+CTTSMUTEMIC=<flag>**	Response **OK** If error is related to MS functionality, response: **+CME ERROR: <err>**
	Parameter **<flag>** 0 Microphone will reopen after play Italian TTS even the query result of ”AT+CMUT?” is 1 (mute on) (Default value) 1 Microphone will keep mute after paly Italian TTS if ”AT+CMUT=1” is executed before.
Reference	Note This feature only supports Italian, not support Chinese or English.

1.6 AT+CTTSHF Enable TTS on handfree channel

AT+CTTSHF Enable TTS on handfree channel	
Test Command **AT+CTTSHF=?**	Response **+CTTSHF: (0-1)** **OK**
Read Command **AT+CTTSHF?**	Response **+CTTSHF: <n>**

	OK
	Parameter See Write Command
Write Command **AT+CTTSHF=<n>**	Response **OK** If error is related to ME functionality: **+CME ERROR:** <**err**>
	Parameter **<n>** 0 disable TTS on handfree channel 1 enable TTS on handfree channel
Reference	Note ● This command only relates to CHFA=2 ● This command is stored in non volatile memory ● Not all the SIM900 serial modules support this command.

2. TTS application examples

2.1 Play synthetic speech locally

AT+DTAM=0 *//Set synthetic speech played locally.*

OK

AT+CTTS=1,”005700410052004E0049004E0047002100200046 0049005200450021” *//Text in **UCS2** coding format, context of the text is ”**WARNING! FIRE!**”.*

OK *//Speech synthetized successfully, played locally.*

+CTTS:0 *//Speech played over. **Note: User needs to wait this response to play next speech!***

AT+CTTS=2,”WARNING! FIRE!” *//Text in **ASIIC** coding format.*

OK

+CTTS:0

AT+CTTS=3,"ATTENZIONE! FUOCO!" *//Text in **Italian** .*

OK

+CTTS:0

2.2 Play synthetic speech remotely

AT+DTAM=1 *//Set synthetic speech played remotely.*

OK

ATD32523433; *//Setup a voice call.*

OK

AT+CTTS=2,”WARNING! FIRE!” *//Text in **ASIIC** coding format.*

OK *//Speech synthetized successfully, played remotely.*

+CTTS:0 *//Speech played over. **Note: User needs to wait this response to play next speech!***

AT+CTTS=3,"ATTENZIONE! FUOCO!" *//Text in **Italian***

OK

+CTTS:0

2.3 Stop playing synthetic speech

AT+CTTS=0 *//Stop playing synthetic speech*

OK

2.4 Play Italian TTS remotely and mute the microphone

AT+CTTSPAUSE? *//Query the punctuation pause time currently*

+CTTSPAUSE: 0,(",",150),(".",400)

OK

AT+CTTSPAUSE=1,",",1000 *//Set the punctuation comma pause time*

OK

AT+CTTSPAUSE=1,".",2000 *//Set the punctuation period pause time*

OK

AT+CTTSMUTEMIC? *//Query if mute microphone after play Italian speech*

+CTTSMUTEMIC: 0

OK

AT+CTTSMUTEMIC=1 *//Set the flag that keep microphone mute status after play TTS*

OK

ATD13611679892;

OK

AT+CMUT?

+CMUT: 0

OK

AT+CMUT=1 *//mute the microphone*

OK

AT+CTTS=3,"Lasiai pensare,Ma questo per lui e per i colleghi è solo un dettaglio "

OK

+CTTS:0

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