



A76XX Series_Audio _Application Note

LTE Module

SIMCom Wireless Solutions Limited

SIMCom Headquarters Building, Building 3, No. 289 Linhong
Road, Changning District, Shanghai P.R.China

Tel: 86-21-31575100

support@simcom.com

www.simcom.com

Document Title:	A76XX Series_Audio_Application Note
Version:	1.03
Date:	2022.05.25
Status:	Released

GENERAL NOTES

SIMCOM OFFERS THIS INFORMATION AS A SERVICE TO ITS CUSTOMERS, TO SUPPORT APPLICATION AND ENGINEERING EFFORTS THAT USE THE PRODUCTS DESIGNED BY SIMCOM. THE INFORMATION PROVIDED IS BASED UPON REQUIREMENTS SPECIFICALLY PROVIDED TO SIMCOM BY THE CUSTOMERS. SIMCOM HAS NOT UNDERTAKEN ANY INDEPENDENT SEARCH FOR ADDITIONAL RELEVANT INFORMATION, INCLUDING ANY INFORMATION THAT MAY BE IN THE CUSTOMER'S POSSESSION. FURTHERMORE, SYSTEM VALIDATION OF THIS PRODUCT DESIGNED BY SIMCOM WITHIN A LARGER ELECTRONIC SYSTEM REMAINS THE RESPONSIBILITY OF THE CUSTOMER OR THE CUSTOMER'S SYSTEM INTEGRATOR. ALL SPECIFICATIONS SUPPLIED HEREIN ARE SUBJECT TO CHANGE.

COPYRIGHT

THIS DOCUMENT CONTAINS PROPRIETARY TECHNICAL INFORMATION WHICH IS THE PROPERTY OF SIMCOM WIRELESS SOLUTIONS LIMITED. COPYING, TO OTHERS AND USING THIS DOCUMENT, ARE FORBIDDEN WITHOUT EXPRESS AUTHORITY BY SIMCOM. OFFENDERS ARE LIABLE TO THE PAYMENT OF INDEMNIFICATIONS. ALL RIGHTS RESERVED BY SIMCOM IN THE PROPRIETARY TECHNICAL INFORMATION, INCLUDING BUT NOT LIMITED TO REGISTRATION GRANTING OF A PATENT, A UTILITY MODEL OR DESIGN. ALL SPECIFICATION SUPPLIED HEREIN ARE SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME.

SIMCom Wireless Solutions Limited

SIMCom Headquarters Building, Building 3, No. 289 Linhong Road, Changning District, Shanghai P.R. China

Tel: +86 21 31575100

Email: simcom@simcom.com

For more information, please visit:

<https://www.simcom.com/download/list-863-en.html>

For technical support, or to report documentation errors, please visit:

<https://www.simcom.com/ask/> or email to: support@simcom.com

Copyright © 2022 SIMCom Wireless Solutions Limited All Rights Reserved.

About Document

Version History

Revision	Date	Chapter	Description
V1.00	2020.06.19		New version
V1.01	2021.07.02		GENERAL NOTES COPYRIGHT
V1.02	2021.11.08	Scope	Scope description is updated
V1.03	2022.03.24	ALL	Organize format

Scope

Based on module AT command manual, this document will introduce Audio application process. Developers could understand and develop application quickly and efficiently based on this document. This document applies to A1803S Series, A1603 Series, A1601 Series and A1802 Series.

SIMCom
Confidential

Contents

About Document	2
Version History	2
Scope	3
Contents	4
1 Introduction	5
1.1 Purpose of the document	5
1.2 Related documents	5
1.3 Conventions and abbreviations	5
1.4 The process of Using Audio AT Commands	5
1.4.1 The process of TTS function	6
1.4.2 The process of audio file playback function	6
1.4.3 The process of record function	7
1.5 Error Handling	8
1.5.1 Executing Audio AT Commands Fails	8
2 ATCommands for Audio	9
2.1 Overview of AT Commands for Audio	9
3 AudioExamples	10
3.1 TTS Function	10
3.1.1 Set TTS parameters	10
3.1.2 Playing UCS2 text or ASCII text	10
3.1.3 Playing UCS2 text or ASCII text and saving to WAV file	11
3.1.4 TS remote playback	11
3.1.5 Playing UCS2 text or ASCII text and saving to WAV file	错误！未定义书签。
3.2 Audio Function	11
3.2.1 Play AMR file and WAV file	11
3.2.2 Play audio file to the remote	12
3.2.3 Stop audio file playback	12
3.3 Record Function	13
3.3.1 Local recording	13
3.3.2 Remote recording	13
3.3.3 Stop recording	13
4 Appendix	15
4.1 Summary of Error Codes	15

1 Introduction

1.1 Purpose of the document

Based on module AT command manual, this document will introduce Audio application process. Developers could understand and develop application quickly and efficiently based on this document. This document gives the usage of A76XX TTS functions, Audio file playback functions and record functions. User can get useful information about these functions quickly through this document.

The functions are provided in AT command format, and they are designed for customers to design their audio applications easily. User can access these Audio AT commands through UART/ USB interface which communicates with A76XX module. Now Chinese and English languages can be supported in TTS functions. And Audio file playback support to play WAV and AMR files. On the other hand, the record file are saved as WAV files.

1.2 Related documents

[1] A76XX Series_AT Command Manual

1.3 Conventions and abbreviations

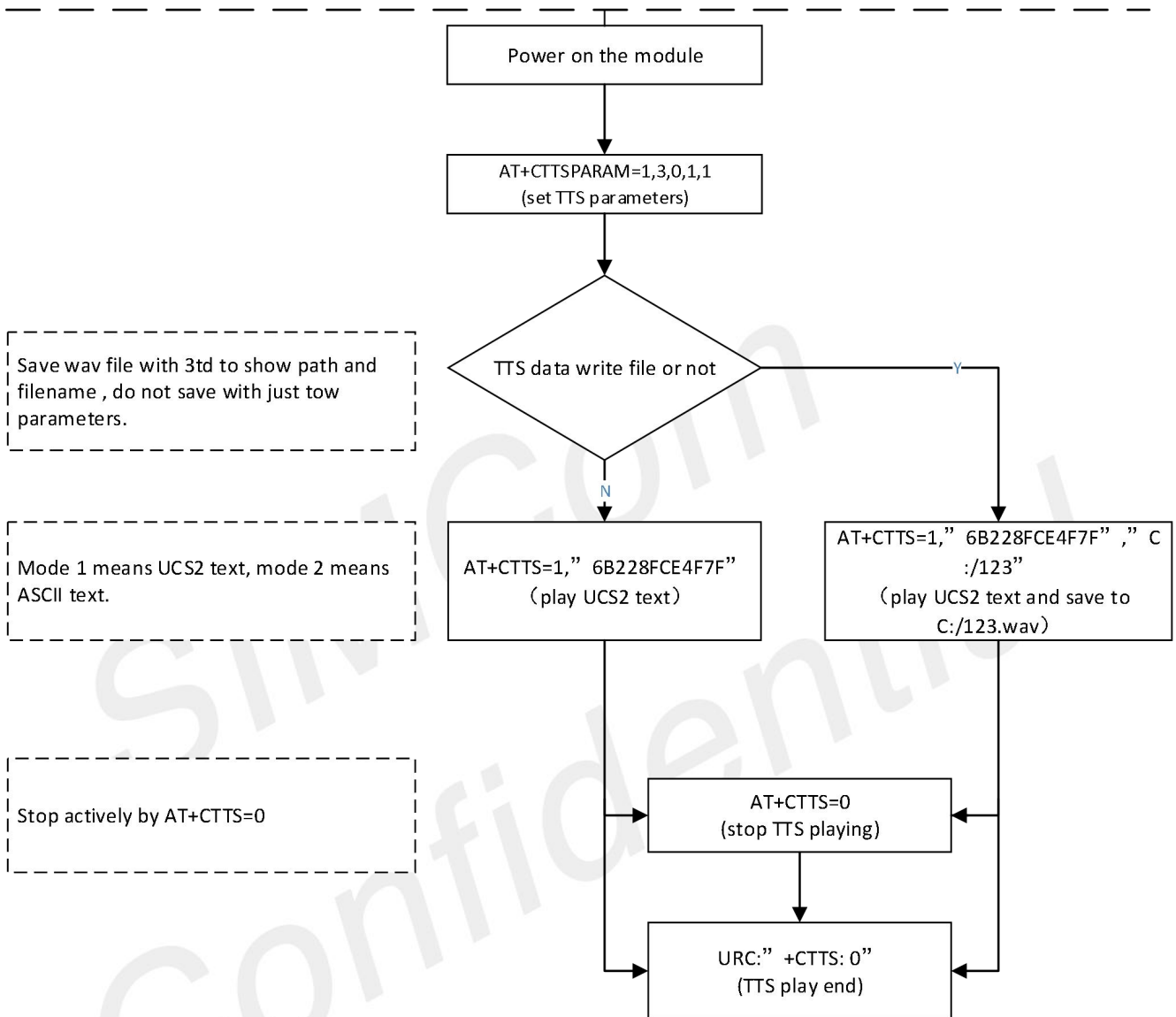
In this document, the GSM engines are referred to as following term:

AMR (Adaptive Multi-Rate);

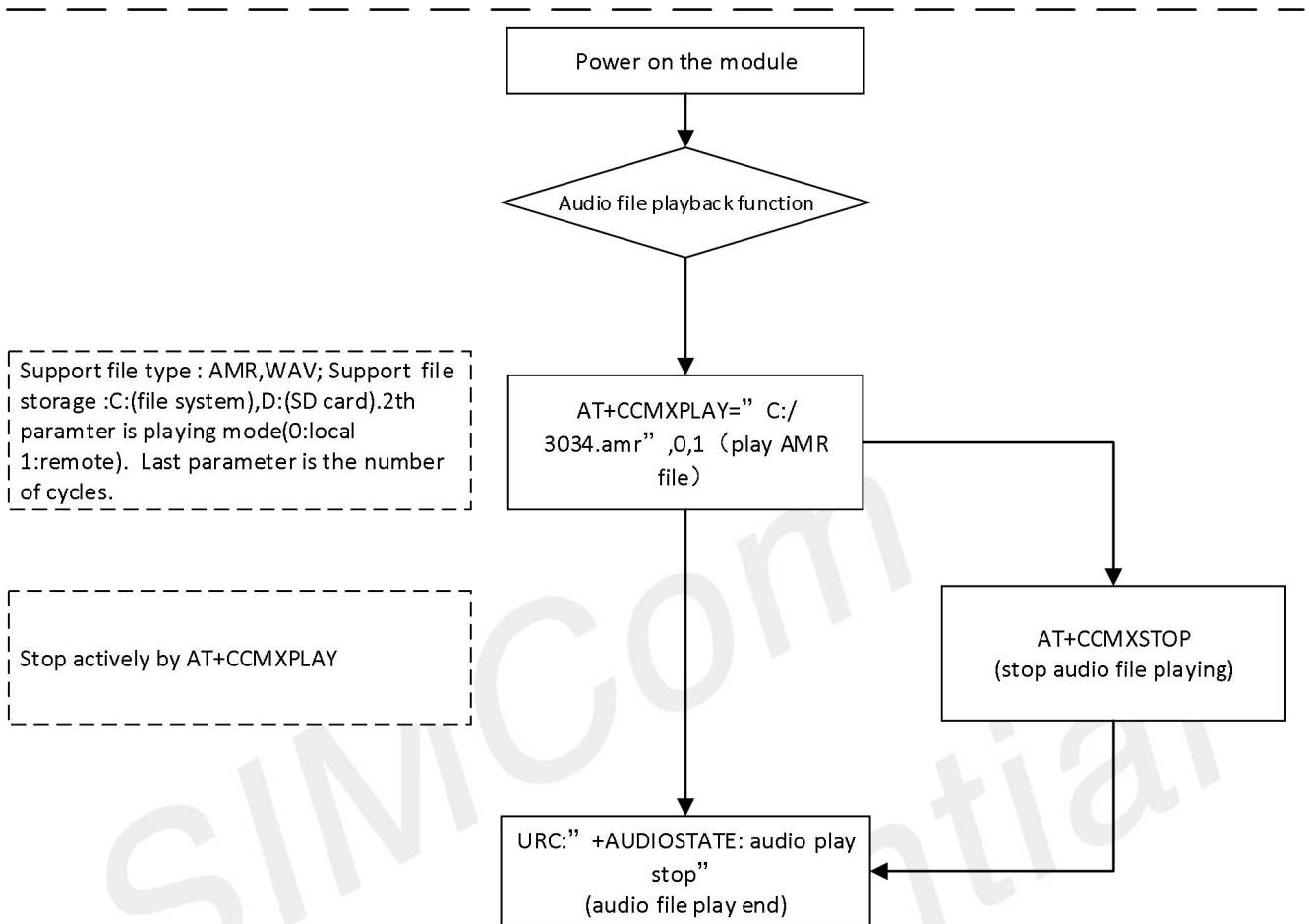
TTS (Text to Speech);

1.4 The process of Using Audio AT Commands

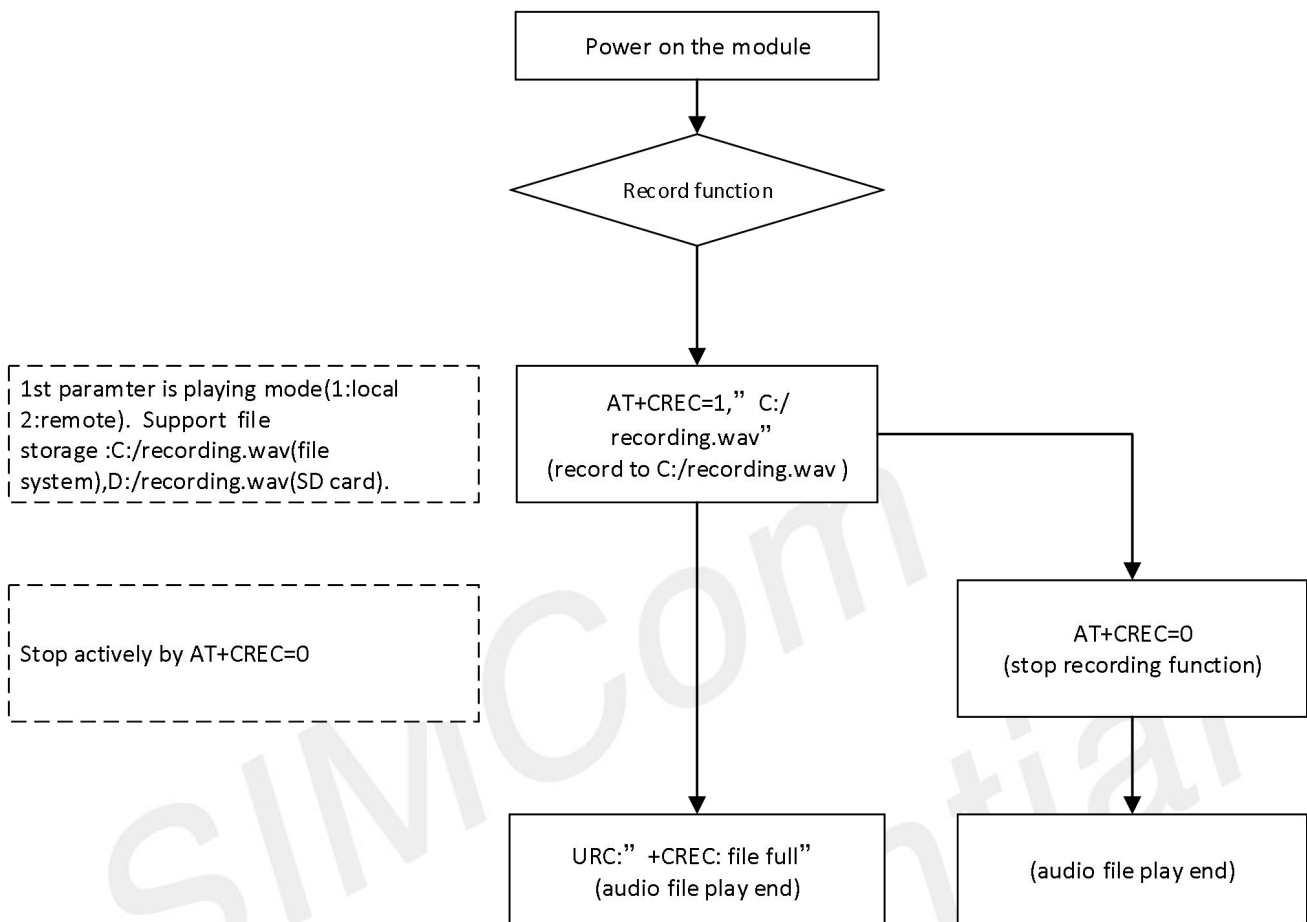
1.4.1 The process of TTS function



1.4.2 The process of audio file playback function



1.4.3 The process of record function



1.5 Error Handling

1.5.1 Executing Audio AT Commands Fails

When executing Audio AT commands, if ERROR response is received from the module, please check whether the version is supporting it when executing.

2 ATCommands for Audio

2.1 Overview of AT Commands for Audio

Command	Description
AT+CTTS	TTS operation
AT+CTTSPARAM	Set TTS parameters
AT+CDTAM	Set local or remote audio play
AT+CCMXPLAY	Play an audio file
AT+CCMXSTOP	Stop playing audio file
AT+CREC	Record WAV audio file

3 Audio Examples

3.1 TTS Function

3.1.1 Set TTS parameters

```
//Example of TTS parameters setting
AT+CTTSPARAM=?                                //read parameters scale
+CTTSPARAM:(0-2),(0-3),(0-3),(0-2),(0-2)

OK
AT+CTTSPARAM=1,3,0,1,1                        //set
OK                                                parameters(volume,sysvolume,digitmode,pitch,sp
                                                eed)
AT+CTTSPARAM?                                //read TTS parameters
+CTTSPARAM:1,3,0,1,1

OK
```

3.1.2 Playing UCS2 text or ASCII text

```
//Example of TTS play
AT+CTTS=1,"6B228FCE4F7F75288BED97F35         //synth and play UCS2 text
40862107CFB7EDF"                             //playing end
+CTTS:

OK
+CTTS: 0

AT+CTTS=2,"1234567890"                         //synth and play ASCII text
+CTTS:

OK
+CTTS: 0                                         //playing end
```

3.1.3 Playing UCS2 text or ASCII text and saving to WAV file

//Example of TTS play

AT+CTTS=3,"123456789012345678","C:/123.wav //synth and play ASCII text,save to "C:/123.wav"
av"

+CTTS:

OK

+CTTS: 0 //playing end

AT+CTTS=4,"6B228FCE4F7F75288BED97F35 //synth and play UCS2 text,save to "D:/123.wav"
40862107CFB7EDF"," D:/123.wav"

+CTTS:

OK

//playing end

+CTTS: 0

3.1.4 TTS remote playback

//Example of TTS play to the remote

AT+CDTAM=1 //set remote playback

OK

ATD199XXXXXXX; //start call and stay on call

OK

AT+CTTS=1,"6B228FCE4F7F75288BED97F35 //synth and play UCS2 text to the remote
40862107CFB7EDF"

+CTTS:

OK

+CTTS: 0 //playing end

3.2 Audio Function

3.2.1 Play AMR file and WAV file

//Example of Audio file playback

AT+CFTRANRX="C:/3034.amr",24742	//import audio file to "C:/3034.amr" and file size is 24742 bytes.
>	
OK	
AT+CCMXPLAY="C:/3034.amr",0,3	//play "C:/3034.amr" and repeat 3 times
+CCMXPLAY:	
OK	
+AUDIOSTATE: audio play	//start playback
+AUDIOSTATE: audio play stop	//playing end
AT+CCMXPLAY="C:/recording.wav",0,0	//play the recorded file"C:/recording.wav"
+CCMXPLAY:	
OK	
+AUDIOSTATE: audio play	//start playback
+AUDIOSTATE: audio play stop	//playing end

3.2.2 Play audio file to the remote

//Example of Audio file playback	
ATD199XXXXXXXXX;	//start call and stay on call
OK	
AT+CCMXPLAY="C:/3034.amr",1,0	//play "C:/3034.amr" to the remote
+CCMXPLAY:	
OK	
+AUDIOSTATE: audio play	//start playback
+AUDIOSTATE: audio play stop	//playing end

3.2.3 Stop audio file playback

//Example of Audio file playback	
AT+CCMXPLAY="C:/3034.amr",1,0	//play "C:/3034.amr" to the remote
+CCMXPLAY:	
OK	
+AUDIOSTATE: audio play	//start playback

```
AT+CCMXSTOP //stop file playback
+CCMXSTOP:

OK
+AUDIOSTATE: audio play stop
```

3.3 Record Function

3.3.1 Local recording

```
//Example of recording
AT+CREC=1,"C:/recording.wav" //start recording and save to "C:/recording.wav"
+CREC: 1

OK
+CREC: file full //recording time is about 40s and recording end
```

3.3.2 Remote recording

```
//Example of recording
ATD199XXXXXXX; //start call and stay on call
OK
AT+CREC=2,"C:/recording.wav" //start recording and save to "C:/recording.wav"
+CREC: 2

OK
+CREC: file full //recording time is about 80s and recording end
```

3.3.3 Stop recording

```
//Example of recording
AT+CREC=1,"C:/recording.wav" //start recording and save to "C:/recording.wav"
+CREC: 1

OK
```

AT+CREC=0

//stop recording

+CREC: 0

OK

SIMCom
Confidential

4 Appendix

4.1 Summary of Error Codes

Code of <errcode>	Meaning
0	Success
2	Unknown error
3	Busy
7	File not exists or any other memory error
8	Invalid parameter
9	Operation rejected by server
11	State error
17	File error,file not exist or other error.