



# A76XX Series\_Audio \_Application Note

LTE Module

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# 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

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## 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.

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# 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

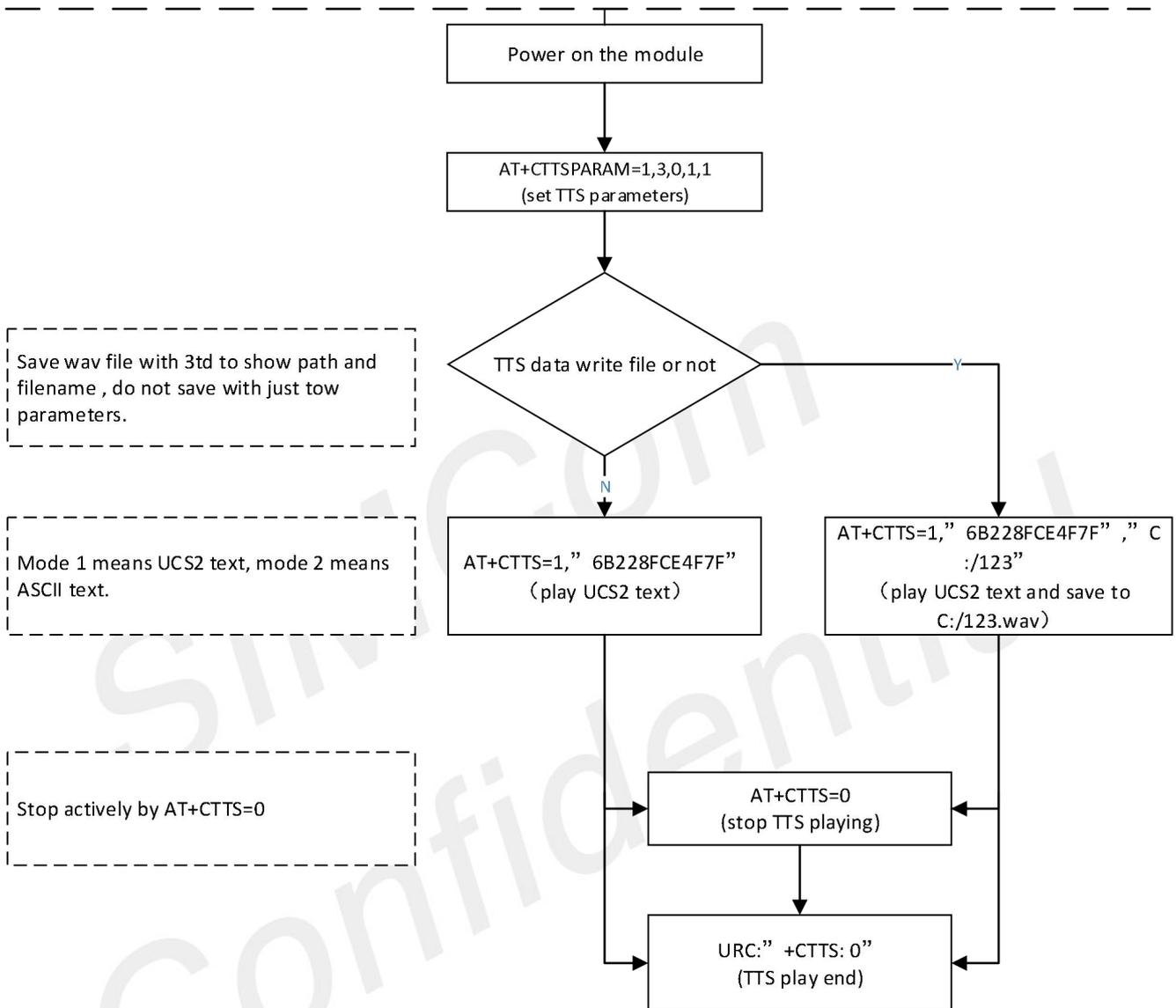
In this document, the GSM engines are referred to as following term:

AMR (Adaptive Multi-Rate);

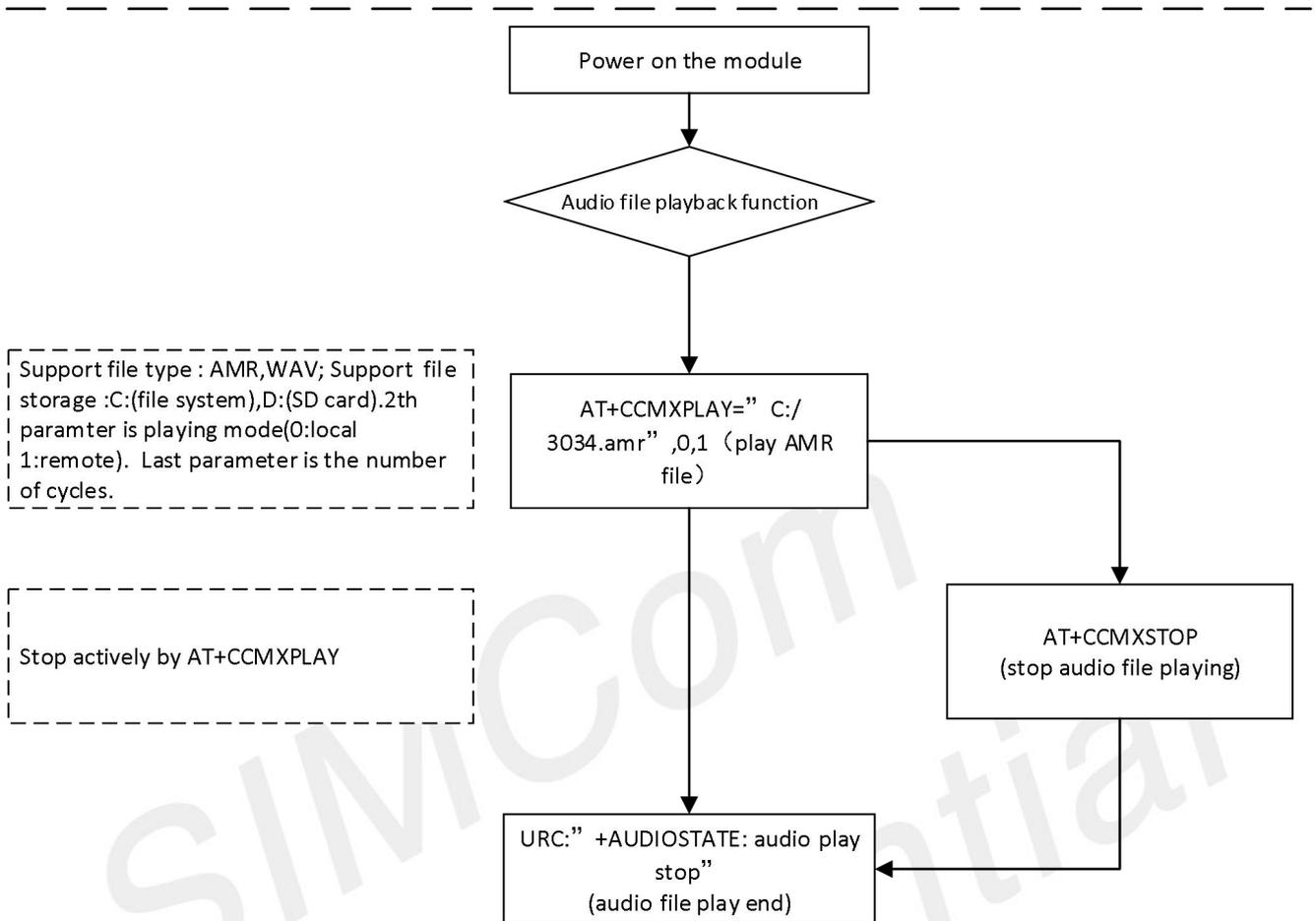
TTS (Text to Speech);

## 1.4 The process of Using Audio AT Commands

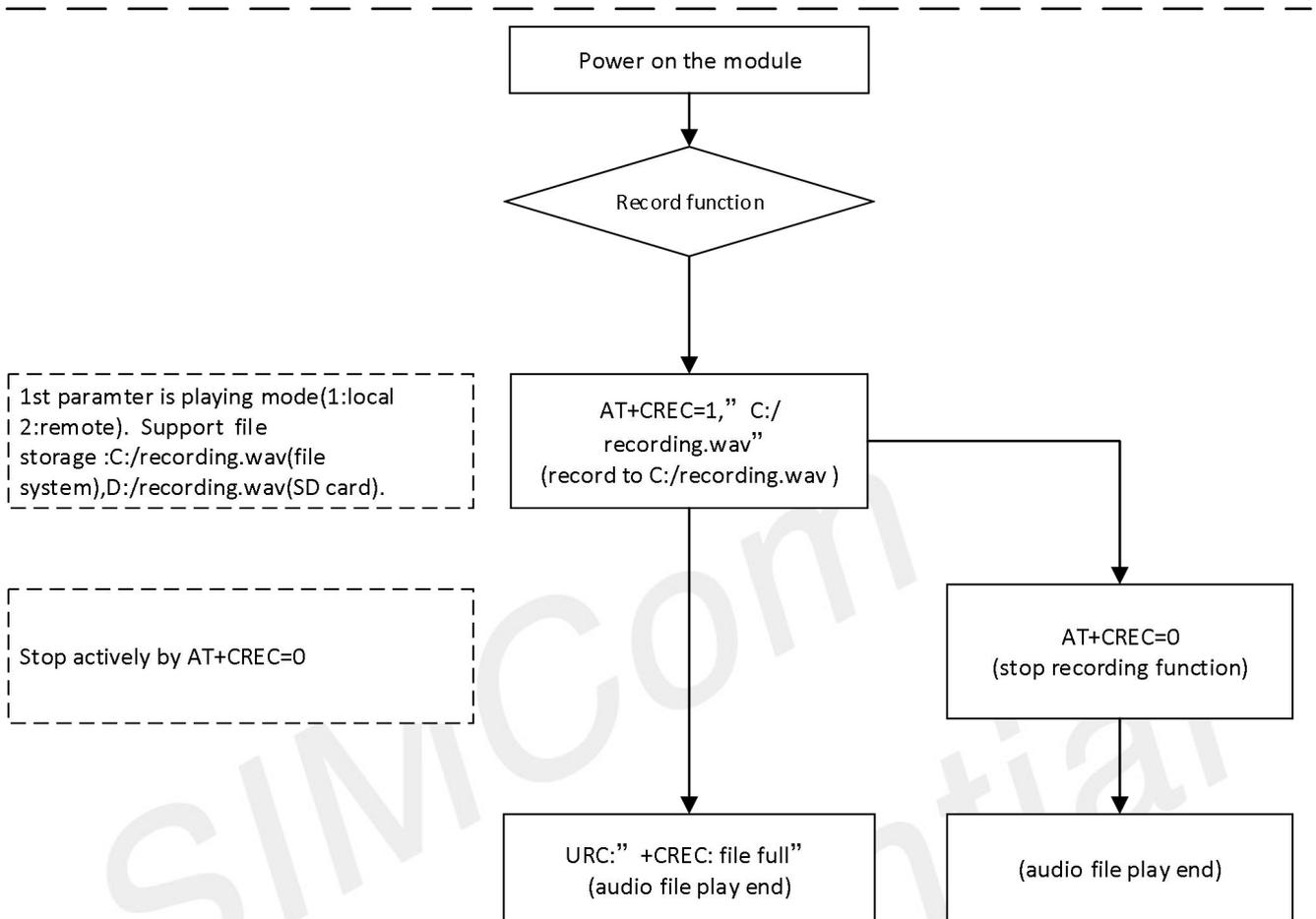
### 1.4.1 The process of TTS function



### 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
<b>AT+CTTS</b>	TTS operation
<b>AT+CTTSPARAM</b>	Set TTS parameters
<b>AT+CDTAM</b>	Set local or remote audio play
<b>AT+CCMXPLAY</b>	Play an audio file
<b>AT+CCMXSTOP</b>	Stop playing audio file
<b>AT+CREC</b>	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
ATD199XXXXXXXXX; //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

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## 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.