SIM7100_SIM7500_SIM7600 _SIM7800 Series_USB 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

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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

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About Document

Version History

Version	Date	Owner	What is new
V2.00	2020.8.6	Mingjun Li	Update the format
V3.00	2021.11.19	Haotian Wang	Update the format

Contents

1 Introduction

1.1 Purpose of the document

This document gives the usage of SIM7100/SIM7500/SIM7600/SIM7800 USB AUDIO functions. User can get useful information about the SIM7100/SIM7500/SIM7600/SIM7800 USB AUDIO functions quickly through this document.

The USB AUDIO functions are provided in AT command format, and they are designed for user to design their software PCM applications easily. User can access the USB AUDIO AT commands through UART/ USB interface which communicates with SIM7100/SIM7500/SIM7600/SIM7800 module.

SIM7100/SIM7500/SIM7600/SIM7800 USB AUDIO features:

- MO call of USB AUDIO flow
- MT call of USB AUDIO flow

1.2 Conventions and abbreviations

For the purposes of the present document, the following abbreviations apply:

- AT the two-character abbreviation is used to start a command line to be sent from TE/DTE to TA/DCE
- USB AUDIO A method used for external MPU and the module to transferring software PCM data

2 USB AUDIO Transferring Method

2.1 USB AUDIO Flow of MO CALL

The following commands give an example of MO call for USB AUDIO:

1) External MPU runs "ATD…" command to dial the destination phone number

ATD 10086;

2) Module reports "VOICE CALL: BEGIN" to indicate that the voice call is connected now. External MPU runs "AT+CPCMREG=1" command to begin the PCM data transferring on the USB AUDIO port. If you want hear the ring back tone, you can run "AT+CPCMREG=1" command after ATDXXX;

VOICE CALL: BEGIN
AT+CPCMREG=1

3) Now the external MPU and the module can exchange software PCM data until the call is hung up.
Following is the USB AUDIO flow diagram of MO call.
The black arrow lines indicate using AT port, the blue arrow lines indicate Audio data using Audio port.

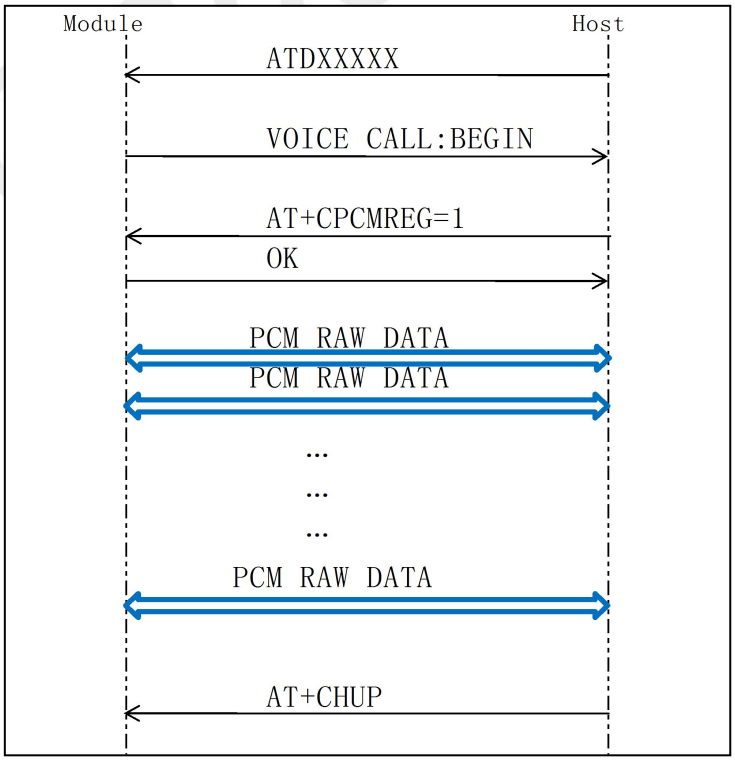

Diagram 1: Mo Call

4) When the voice call is hung up, the USB AT port should report "VOICE CALL: END:" , and then the external MPU may run "AT+CPCMREG=0" command to stop transferring the software PCM data on the USB AUDIO port.

VOICE CALL: END:
AT+CPCMREG=0

2.2 USB AUDIO Flow of MT CALL

The following commands give an example of MT call for USB AUDIO:

1) Module reports " VOICE CALL: BEGIN " to indicate that the voice call is connected now. External MPU runs "AT+CPCMREG=1" command to begin the PCM data transferring on the USB AUDIO port.

VOICE CALL: BEGIN
AT+CPCMREG=1

2) Now the external MPU and the module can exchange software PCM data until the call is hung up.
Following is the USB AUDIO flow diagram of MO call.
The black arrow lines indicate using AT port, the blue arrow lines indicate Audio data using Audio port.

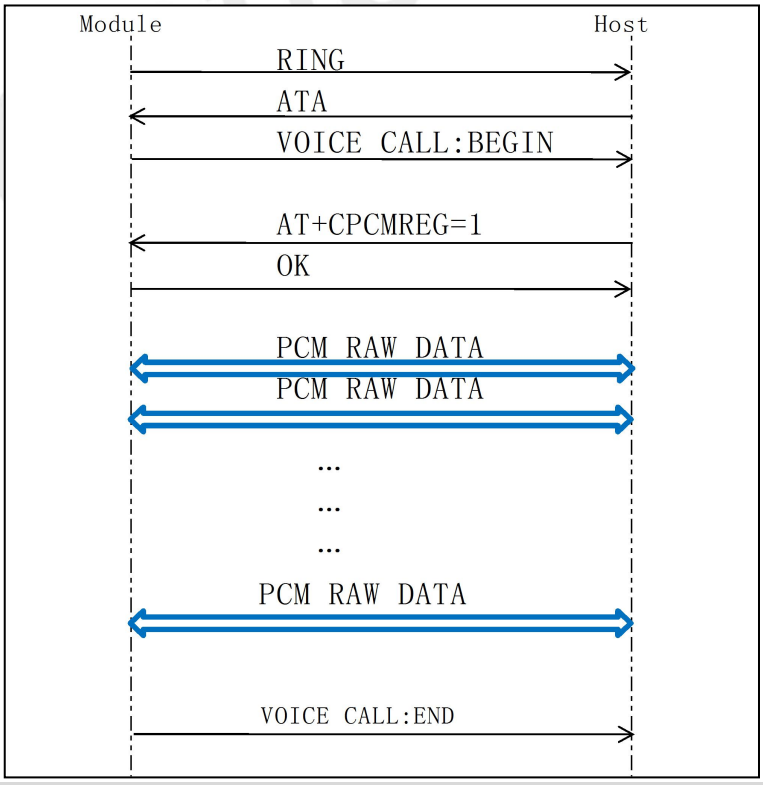

Diagram 2: MT Call

3) When the voice call is hung up, the USB AT port should report "VOICE CALL: END:" , and then the external MPU may run "AT+CPCMREG=0" command to stop transferring the software PCM data on the USB AUDIO port.

VOICE CALL: END:
AT+CPCMREG=0

2.3 USB AUDIO PCM Data Format

USB audio PCM data format is 8K sample rate, 16 bit linear. You can set "AT+CPCMFRM=1" after module reset if you want use 16K sample rate , 16 bit linear (only support 7500/7600 series), this set not saved when module reset.
AT command use “AT Port 9001” (black circle line marked)
Audio data use “Audio 9001” (blue circle line marked)

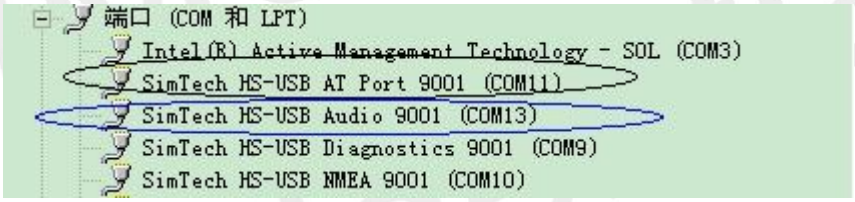

Diagram 3: USB port