A76XX Series_ CTBURST_Application Note

LTE Module

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About Document

Version History

Revision	Date	Chapter	Description
V1.00	2020.11.20	Yulong.zheng	New version

Scope

This document presents the AT Command Set for SIMCom A76XXand A7678 Series, including A76XX-XXXX, A5360E, A76X0X-XXXX and A7678C.

Contents

1 Introduction

1.1 Purpose of the document

Based on module AT command manual, this document will introduce CTBURST application process.

Developers could understand and develop application quickly and efficiently based on this document.

1.2 Related documents

[1] A7600 Series_AT Command Manual

1.3 Conventions and abbreviations

In this document, the GSM engines are referred to as following term:
RF (Radio Frequency);

2 AT Commands for CTBURST(CAT4)

2.1 Overview of AT Commands for CTBURST

Command	Description
AT+CTBURST	The RF TX Burst Test

2.2 AT+CTBURST   The RF TX Burst Test

AT+CTBURST The RF TX Burst Test	
Write Command **AT+CTBURST=<option>,<band>,<power>,<gsmband>,<para>**	Response 1)LTE RF TX successfully: ***RADIOPOWER: 0** **OK** **+CTBURST:0** 2)GSM RF TX successfully: ***RADIOPOWER: 0** **+CTBURST:0** ***GSMTR:-31355** **OK** RF TX failed: ***RADIOPOWER: 0** **+CME ERROR: unknown error**
Test Command **AT+CTBURST=?**	Response **+CTBURST=<option>,<band>,<power>,<gsmband>,<para>**

Parameter Saving Mode	-
Max Response Time	-
Reference	-

Defined Values

<option>	0 – default.
<band>	1 – LTE frequency = 18300. 2 – LTE frequency = 18900. 3 – LTE frequency = 19500. 4 – LTE frequency = 20175. 5 – LTE frequency = 20525. 6 – LTE frequency = 20700. 7 – LTE frequency = 21100. 8 – LTE frequency = 21625. 17 – LTE frequency = 23790. 20 – LTE frequency = 24300. 38 – LTE frequency = 38000. 39 – LTE frequency = 38450. 40 – LTE frequency = 39150. 101 – GSM TX.
<power>	0 – LTE max power. 1 – LTE 10 dBm. 9 – LTE turn off TX.
<gsmband>	0 – GSM 900. 1 – GSM 1800. 2 – GSM 1900. 3 – GSM 850. 4 – WCDMA band1. 5 – WCDMA band2. 7 – WCDMA band5. 8 – WCDMA band8. 9 – GSM turn off TX.
<para>	0 – GSM TX. 9 – GSM turn off TX.

3 CTBURST Examples(CAT4)

3.1 CTBURST GSM TX

```
//Example of GSM TX
AT+CFUN=0                            //This instruction must be sent before TX can be
+SIMCARD: NOT AVAILABLE              tested

+CGEV: ME DETACH

OK

*RADIOPOWER: 0
AT+CTBURST=0,101,0,1,0               //GSM 1800 MHZ Maximum power emission
*RADIOPOWER: 0

+CTBURST:0
*GSMTR:-31355

OK
AT+CTBURST=0,101,0,9,9               //GSM turn off emission.
*RADIOPOWER: 0

+CTBURST:0
*GSMTR:-31355

OK
```

3.2 CTBURST LTE TX

```
//Example of LTE TX
AT+CFUN=0                            //This instruction must be sent before TX can be
+SIMCARD: NOT AVAILABLE              tested

+CGEV: ME DETACH
```

OK

*RADIOPOWER: 0
AT+CTBURST=0,38,0   //B38 Maximum power emission
*RADIOPOWER: 0

OK

+CTBURST:0
AT+CTBURST=0,1,9   //LTE turn off emission.
*RADIOPOWER: 0

OK

+CTBURST:0

NOTE

To test each item, close the previous item first. When testing LTE, you need to restart the module. The second and third parameters are mainly for LTE, and the fourth and fifth parameters are mainly for GSM

4 AT Commands for CTBURST(CAT1)

4.1 Overview of AT Commands for CTBURST

Command	Description
AT+CTBURST	The RF TX Burst Test

4.2 AT+CTBURST   The RF TX Burst Test

AT+CTBURST The RF TX Burst Test	
Write Command **AT+CTBURST=<option>,<channel>,<arfcn>,<power>**	Response 1)LTE RF TX successfully: **+CTBURST:0,OK; RX:rssiPri=0,rssiSec=0** **OK** 2)GSM RF TX successfully: **+CTBURST:0** **OK** RF TX failed: **+CME ERROR: unknown error**
Test Command **AT+CTBURST=?**	Response **+CTBURST=<option>,<channel>,<arfcn>,<power>**
Parameter Saving Mode	-
Max Response Time	-
Reference	-

Defined Values

<option>	0 – start TX. 1 – start RX. 3 – stop GSM Tx or Rx.

\<channel\>	LTE: 1 – LTE frequency = 18300. 2 – LTE frequency = 18900. 3 – LTE frequency = 19500. 4 – LTE frequency = 20175. 5 – LTE frequency = 20525. 6 – LTE frequency = 20700. 7 – LTE frequency = 21100. 8 – LTE frequency = 21625. 17 – LTE frequency = 23790. 20 – LTE frequency = 24300. 28 – LTE frequency = 27435. 38 – LTE frequency = 36275. 38 – LTE frequency = 38000. 39 – LTE frequency = 38450. 40 – LTE frequency = 39150. GSM: 101 – PGSM 900. 102 – DCS GSM 1800. 103 – PCS GSM 1900. 104 – EGSM 900. 105 – GSM 450. 106 – GSM 480. 107 – GSM 850.
\<arfcn\>	Absolute Radio Frequency Channel Number: For PGSM 900, range: (1-124) For DCS1800, range: (512-885) For PCS1900, range: (512-810) For EGSM 900, range: (0-124) and (975-1023) For GSM 450, range: (259-293) For GSM 480, range: (306-340) For GSM850, range: (128-251)
\<power\>	0 – LTE max power. 1 – LTE 10 dBm. 9 – LTE turn off TX.

5 CTBURST Examples(CAT1)

5.1 CTBURST GSM TX

//Example of GSM TX

AT+CFUN=0
+SIMCARD: NOT AVAILABLE   //This instruction must be sent before TX can be tested

+CGEV: ME DETACH

OK
AT+CNMP?
AT+CTBURST=0,101,10   //GSM 900 arfcn10 Maximum power emission
+CTBURST:0

OK
AT+CTBURST=3   //GSM turn off emission.
+CTBURST:0

OK

5.2 CTBURST LTE TX

//Example of LTE TX

AT+CFUN=0
+SIMCARD: NOT AVAILABLE   //This instruction must be sent before TX can be tested

+CGEV: ME DETACH

OK
AT+CTBURST=0,1,0,0   //BAND1 Maximum power emission
+CTBURST:0,OK; RX:rssiPri=0,rssiSec=0

OK
AT+CTBURST=0,1,0,9   //LTE turn off emission.

+CTBURST:0,OK; RX:rssiPri=0,rssiSec=0

OK

NOTE

To test each item, close the previous item first.