



# A76XX Series\_ CTBURST\_Application Note

LTE Module

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# About Document

## Version History

Revision	Date	Owner	Description
V1.00	2021.10.29	Yulong.zheng	New version
V1.01	2021.03.07	Yulong.zheng	Delete CAT1
V1.02	2022.05.05	Yulong.zheng	Modify Scope
	2022.07.04	Bobo.shao	Add B31 and B72
V1.03	2022.12.19	Bobo.shao	Modify Scope
V1.04	2022.02.07	Zhirong.jia	Change example
	2022.02.20	Zhirong.jia	Change example and add note

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## Scope

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. This document applies to ASR Series except ASR1802S.

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# 1 Introduction

## 1.1 Purpose of the document

Based on module AT command manual, this document will introduce RF TX/RX application process. Developers could understand and develop application quickly and efficiently based on this document.

## 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:

ME (Mobile Equipment);

MS (Mobile Station);

TA (Terminal Adapter);

DCE (Data Communication Equipment) or facsimile DCE (FAX modem, FAX board);

In application, controlling device controls the GSM engine by sending AT Command via its serial interface.

The controlling device at the other end of the serial line is referred to as following term:

TE (Terminal Equipment);

DTE (Data Terminal Equipment) or plainly "the application" which is running on an embedded system;

## 2 AT Commands for CTBURST

### 2.1 Overview of AT Commands for CTBURST

Command	Description
<b>AT+CTBURST</b>	Set TX/RX Power

### 2.2 AT+CTBURST The TX/RX Burst Test

AT+CTBURST The RF TX Burst Test	
Test Command <b>AT+CTBURST=?</b>	Response <b>+CTBURST=0-2,0-142,1-65535,-5000-3500, 0-5</b>
	<b>OK</b>
	Response If mode is 0 <b>+CTBURST: TX/RX OFF</b>
	<b>OK</b>
	If mode is 1 <b>+CTBURST: TX ON</b>
	<b>OK</b>
Write Command <b>AT+CTBURST=&lt;mode&gt;[,&lt;band&gt;,&lt;channel&gt;,&lt;power&gt;[,&lt;bandwidth&gt;]]</b>	If mode is 2 For gsm/wcdma <b>+CTBURST: RX [rssiValue]</b>
	<b>OK</b>
	For LTE <b>+CTBURST: RX: [mainRssiValue], [secRssiValue]</b>
	<b>OK</b>
Parameter Saving Mode	NO_SAVE
Max Response Time	-

Reference

-

## Defined Values

<b>&lt;mode&gt;</b>	<p>Start/stop TX/RX the burst/waveform</p> <ul style="list-style-type: none"> <li>0 – stop RF TX/RX</li> <li>1 – start RF TX</li> <li>2 – start RF RX</li> </ul>
<b>&lt;band&gt;</b>	<p>The band of burst/waveform to be sent</p> <ul style="list-style-type: none"> <li>0 – GSM 850 Band</li> <li>1 – GSM 900 Band</li> <li>2 – EGSM 900 Band</li> <li>3 – GSM DCS 1800 Band</li> <li>4 – GSM PCS 1900 Band</li> <li>10 – WCDMA IMT 2000 Band</li> <li>11 – WCDMA PCS 1900 Band</li> <li>12 – WCDMA 800 Band</li> <li>13 – WCDMA 850 Band</li> <li>14 – WCDMA 900 Band</li> <li>101 – LTE 1 Band</li> <li>102 – LTE 2 Band</li> <li>103 – LTE 3 Band</li> <li>104 – LTE 4 Band</li> <li>105 – LTE 5 Band</li> <li>106 – LTE 6 Band</li> <li>107 – LTE 7 Band</li> <li>108 – LTE 8 Band</li> <li>109 – LTE 9 Band</li> <li>110 – LTE 10 Band</li> <li>111 – LTE 11 Band</li> <li>112 – LTE 12 Band</li> <li>113 – LTE 13 Band</li> <li>114 – LTE 14 Band</li> <li>117 – LTE 17 Band</li> <li>118 – LTE 18 Band</li> <li>119 – LTE 19 Band</li> <li>120 – LTE 20 Band</li> <li>121 – LTE 21 Band</li> <li>122 – LTE 22 Band</li> <li>123 – LTE 23 Band</li> <li>124 – LTE 24 Band</li> <li>125 – LTE 25 Band</li> <li>126 – LTE 26 Band</li> <li>127 – LTE 27 Band</li> </ul>



	<p>128 – LTE 28 Band          131 – LTE 31 Band          133 – LTE 33 Band          134 – LTE 34 Band          135 – LTE 35 Band          136 – LTE 36 Band          137 – LTE 37 Band          138 – LTE 38 Band          139 – LTE 39 Band          140 – LTE 40 Band          141 – LTE 41 Band          142 – LTE 42 Band          172 – LTE 72 Band</p>
<channel>	<p>Frequency channel, the range is different according to different band          GSM 850: 128~251          GSM 900: 1~124, 975~1023          GSM DCS 1800: 512~885          GSM PCS 1900: 512~810          WCDMA IMT 2000: 9612~9892          WCDMA PCS 1900: 9262~9542          WCDMA 800: 4132~4242, 782~862          WCDMA 850: 4132~4242, 782~862          WCDMA 900: 2712~2872          LTE 1: 18000~18599          LTE 2: 18600~19199          LTE 3: 19200~19949          LTE 4: 19950~20399          LTE 5: 20400~20649          LTE 6: 20650~20749          LTE 7: 20750~21449          LTE 8: 21450~21799          LTE 9: 21800~22149          LTE 10: 22150~22749          LTE 11: 22750~22949          LTE 12: 23010~23179          LTE 13: 23180~23279          LTE 14: 23280~23379          LTE 17: 23730~23849          LTE 18: 23850~23999          LTE 19: 24000~24149          LTE 20: 24150~24449          LTE 21: 24450~24599          LTE 22: 24600~25399          LTE 23: 25500~25699          LTE 24: 25700~26039          LTE 25: 26040~26689</p>

	<p>LTE 26: 26690~27039          LTE 27: 27040~27209          LTE 28: 27210~27659          LTE 31: 27760~27809          LTE 33: 36000~36199          LTE 34: 36200~36349          LTE 35: 36350~36949          LTE 36: 36950~37549          LTE 37: 37550~37749          LTE 38: 37750~38249          LTE 39: 38250~38649          LTE 40: 38650~39649          LTE 41: 39650~41589          LTE 42: 41590~43589          LTE 72: 133472~133521</p>
<power>	<p>For LTE: The power between 0~2000apc, the value is different with different band, Rx the value must be 0apc.          For GSM: The power means afcDac, the value between 0 and 1023. suggested range is (200-700) (too bigger will cause Tx saturated, and equipment could not detect it)</p>
<bandwith>	<p>Rx band width: this value must be set to 0.</p> <ul style="list-style-type: none"> <li>0 1.4M</li> <li>1 3M</li> <li>2 5M</li> <li>3 10M</li> <li>4 15M</li> <li>5 20M</li> </ul>
< rssiValue >	The Rx Power for GSM/WCDMA
< mainRssiValue >	The Main ant Rx Power for LTE
< secRssiValue >	The Sec ant Rx Power for LTE

**NOTE**

To test each item, close the previous item first.

## 3 CTBURST Examples

```
AT+CFUN=0 //Minimum functionality. You can also set
           AT+CFUN=4
OK
AT+CTBURST=1,101,18300,2000 //Start RF TX Power of LTE BAND1 the arfcn is
                             18300 the power is 2000apc
+CTBURST: TX ON
OK
AT+CTBURST=0 //Close TX/RX CTBURST
+CTBURST: TX/RX OFF
OK
AT+CTBURST=2,101,18300,0,0 //Start RF RX Power of LTE BAND1 the arfcn is
                             18300,mainrssi is -60 secrssi is 0
+CTBURST: RX: -60, 0
OK
AT+CTBURST=0 //Close TX/RX CTBURST
+CTBURST: TX/RX OFF
OK
AT+CTBURST=1,1,124,200 //Start RF TX Power of GSM900 the arfcn is 124
                        the power is 200afc
+CTBURST: TX ON
OK
AT+CTBURST=0 //Close TX/RX CTBURST
+CTBURST: TX/RX OFF
OK
AT+CTBURST=2,1,124,200,0 //Start RF RX Power of GSM900 the arfcn is 124
+CTBURST: RX: -60
OK
```

```
AT+CTBURST=0 //Close TX/RX CTBURST

+CTBURST: TX/RX OFF

OK
AT+CTBURST=1,10,9650,2000
+CTBURST: TX ON //Start RF TX Power of WCDMA IMT 2000 the
arfcn is 9650 the power is 2000apc

OK
AT+CTBURST=0 //Close TX/RX CTBURST

+CTBURST: TX/RX OFF

OK
AT+CTBURST=2,10,9650,2000,0
+CTBURST: RX: -60 //Start RF RX Power of WCDMA IMT 2000the
arfcn is 9650

OK
AT+CTBURST=0 //Close TX/RX CTBURST

+CTBURST: TX/RX OFF

OK
```

Conti