A76XX Series_ CTBURST_Application Note

LTE Module

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Document Title:	A76XX Series_CTBURST_Application Note
Version:	1.03
Date:	2022.12.20
Status:	Released

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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

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.

Contents

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
AT+CTBURST	Set TX/RX Power

2.2 AT+CTBURST The TX/RX Burst Test

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

Reference	-

Defined Values

<mode>	Start/stop TX/RX the burst/waveform 0 – stop RF TX/RX 1 – start RF TX 2 – start RF RX
<band>	The band of burst/waveform to be sent 0 – GSM 850 Band 1 – GSM 900 Band 2 – EGSM 900 Band 3 – GSM DCS 1800 Band 4 – GSM PCS 1900 Band 10 – WCDMA IMT 2000 Band 11 – WCDMA PCS 1900 Band 12 – WCDMA 800 Band 13 – WCDMA 850 Band 14 – WCDMA 900 Band 101 – LTE 1 Band 102 – LTE 2 Band 103 – LTE 3 Band 104 – LTE 4 Band 105 – LTE 5 Band 106 – LTE 6 Band 107 – LTE 7 Band 108 – LTE 8 Band 109 – LTE 9 Band 110 – LTE 10 Band 111 – LTE 11 Band 112 – LTE 12 Band 113 – LTE 13 Band 114 – LTE 14 Band 117 – LTE 17 Band 118 – LTE 18 Band 119 – LTE 19 Band 120 – LTE 20 Band 121 – LTE 21 Band 122 – LTE 22 Band 123 – LTE 23 Band 124 – LTE 24 Band 125 – LTE 25 Band 126 – LTE 26 Band 127 – LTE 27 Band

	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
<channel>	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

	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
<power>	For LTE:The power between 0~2000apc, the value is different with different band 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)
<bandwith>	Rx band width:0~5.if it is WCDMA,this value must be set to 0. 0 1.4M 1 3M 2 5M 3 10M 4 15M 5 20M
< rssiValue >	The Rx Power for GSM/WCDMA
< mainRssiValue >	The Main ant Rx Power for LTE
< secRssiValue >	The Sec ant Rx Power for LTE

3 CTBURST Examples

AT+CFUN=0	//Minimum functionality. You can also set AT+CFUN=4
OK	
AT+CTBURST=0	//Close TX/RX CTBURST
+CTBURST: TX/RX OFF	
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=2,101,18300,2000,5	//Start RF RX Power of LTE BAND1 the arfcn is 18300,mainrssi is -60 secrssi is 0
+CTBURST: RX: -60, 0	
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=2,1,124,200,0	
+CTBURST: RX: -60	//Start RF RX Power of GSM900 the arfcn is 124
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=2,10,9650,2000,0	
+CTBURST: RX: -60	//Start RF RX Power of WCDMA IMT 2000the arfcn is 9650
OK	