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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

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	