

SIM7600M22_AYLA_Application Note_V1.00





Document Title:	SIM7600M22 AYLA Application Note	
Version:	1.00	
Date:	2018-08-23	
Status:	Release	
Document ID:	SIM7600M22_AYLA_Application Note_V1.00	

General Notes

SIMCom offers this information as a service to its customers, to support application and engineering efforts that use the products designed by SIMCom. The information provided is based upon requirements specifically provided to SIMCom by the customers. SIMCom has not undertaken any independent search for additional relevant information, including any information that may be in the customer's possession. Furthermore, system validation of this product designed by SIMCom within a larger electronic system remains the responsibility of the customer or the customer's system integrator. All specifications supplied herein are subject to change.

Copyright

This document contains proprietary technical information which is the property of SIMCom Limited., copying of this document and giving it to others and the using or communication of the contents thereof, are forbidden without express authority. Offenders are liable to the payment of damages. All rights reserved in the event of grant of a patent or the registration of a utility model or design. All specification supplied herein are subject to change without notice at any time.

Copyright © Shanghai SIMCom Wireless Solutions Ltd. 2018



Version History

Version	Chapter	Comments
V1.00	New Version	
		$\times Y'$
C	\mathbf{Y}	
\sim	· ·	



Contents

Version History	2
Contents	3
1. Introduction	4
1.1 Overview	4
1.2 Terms and Abbreviations	4
2. AYLA Related AT Commands	5
2.1 AT+AYLACFG Set/Get Config info	5
2.2 AT+AYLASERVICE Open/Close AYLA Service	
2.3 +AYLASTATUS AYLA Service status	7
2.4 AT+AYLASTATUS GET AYLA status	8
2.5 AT+AYLASEND Send property	8
2.6 AT+AYLARECV Get property from air	9
2.7 AT+AYLATEMPLATE SET Local Property Template	9
2.8 +AYLAFOTA AYLA FOTA Status	10
3. Example	11
4. AYLA OTA	13
4.1 AT commands of the device	13
4.2 Manage website operations	13
4.2.1 Upload image version	13
4.2.2 Create OTA working	14
4.2.3 Start OTA working	15
4.2.4 Check OTA status of the device	15
4.3 OTA EXAMPLE	15



1. Introduction

1.1 Overview

This document gives the usage of SIM7600M22 AYLA functions. User can get useful information about the SIM7600 AYLA functions quickly through this document.

1.2 Terms and Abbreviations

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

• AT ATtention; the two-character abbreviation is used to start a command line to be sent from TE/DTE to TA/DCE





2. AYLA Related AT Commands

Command	Description
AT+AYLACFG	Set/Get Config info
AT+AYLASERVICE	Open/Close AYLA Service
+AYLASTATUS	AYLA Service status
AT+AYLASTATUS	GET AYLA status
AT+AYLASEND	Send property
AT+AYLARECV	Get property from air
AT+AYLATEMPLATE	SET Local Property Template
+AYLAFOTA	AYLA FOTA Status

Below is the AYLA associated with AT commands.

2.1 AT+AYLACFG Set/Get Config info

AT+AYLACFG Set	/Get Config info
Read Command	Response
AT+AYLACFG= <fe< th=""><th>+AYLYCFG: <feature>:<cfginfo></cfginfo></feature></th></fe<>	+AYLYCFG: <feature>:<cfginfo></cfginfo></feature>
ature>	
	ОК
	Parameter:
	<feature> string</feature>
	fdsn
	fpubkey
	oem
	model
	key
	Region
	uid
	autotime
Write Command	Response
AT+AYLACFG= <fe< th=""><th>ОК</th></fe<>	ОК
ature>,[<pubkeyind< th=""><th></th></pubkeyind<>	
ex>], <cfginfo></cfginfo>	Parameter:
	<feature></feature>
	fdsn: dsn,len=15,string
	fpubkey: publickey,maxlen=76,string



	oem: oem id,len=8,string
	model: oem model,maxlen=20,string
	key: oem key,len=32,string
	region: CN or US, string
	uid: user identification,maxlen=15,string
	autotime:int,interval of auto start ayla ,if set 0,disable auto start ayla. Only work when
	execute savebackup command, Value_range:5-5000(min), if set value=5, device will open ayla
	service every 5 minutes, and shut down service 1 minute later after open it.
	<pre><pubkeyindex> int</pubkeyindex></pre>
	Shows when feature= fpubkey
	Value:1-5
	<cfginfo></cfginfo>
	Depends on different feature
Execute Command	Response
AT+AYLACFG=sav	+ AYLYCFG:savebackup : <status></status>
ebackup	
	ОК
	backup ayla cfginfo and template to modem ,device will reboot when send it.
	<status></status>
	0:fail
	1:sucess
Reference	Note
	Write command work when ayla service shut down.
	Write command with feature "fpubkey" only work atfer 1-5 index all executed
	and it should be excuted after that oem, key, model were wrote.
Examples	

Examples

at+aylacfg=fdsn,SC000W000017209
ОК
at+aylacfg=oem,528225f6
ОК
at+aylacfg=model,7600-test
ОК
at+aylacfg=key,17b0bdd6fe06f210f7fafc0d224317b3
ОК
<i>at+aylacfg=fpubkey</i> ,1, <i>MIIBCgKCAQEAobxTMOGC8FBp45zFxZgxGbDyPrNOPDv84/r9buI1RdKQzI</i> + <i>B6WWrb</i>
ОК
at+aylacfg=fpubkey,2,06Aizw+Q8olg5zabR4puEJ1neB6TGmmwveSOcY4RiWD6Syhq4EhbJzyrrVAM zHQtiO0yz6sM/PiH
OK



at+aylacfg=fpubkey,3,KRAE94S6x17eyDpULWbeBetFlbG1cZKfcqEYXA121i5uXmXVO+o++Ae8nkz gSEDM/UdAWBkcuU+x

OK

at+aylacfg=fpubkey,4,8vHyPpDFt4fw6m0OFQkLnv5nRJxHNacy9UACDRy8/7ObJoGaXQzeDxW7B8 aB7lyvzZPubdcNrSVD

OK

at+aylacfg=fpubkey,5,N+HXSzGocGHtoPO2v+LdTswJOo+3KBOiUAU81zjzLFmNAeoVCQIDAQAB OK

2.2 AT+AYLASERVICE Open/Close AYLA Service

AT+AYLASERVICE Open/Close AYLA Service



write Command	Kesponse
AT+AYLASERVIC	ОК
E= <cmd></cmd>	
	Parameter:
	< cmd > int
	1: setup ayla service
	0: shut down ayla service
Reference	Note

Examples

At+aylaservice=1
ОК
AT+aylaservice=0
ОК

Write Commond Door

2.3 +AYLASTATUS AYLA Service status

+AYLASTATUS AYLA Service status	
	Response
	+AYLASIAIUS: <connstatus>, <reason></reason></connstatus>
	Parameter:
	<connstatus></connstatus>
	0:disconnected
	1:connected on line
	<reason></reason>



	0:no reason
Reference	Note Device can be connected to ayla when system time is synchronized.

Examples

+AYLASTATUS:1,0

2.4 AT+AYLASTATUS GET AYLA status

AT+AYLASTATUSAYLA Service statusREAD CommandResponseAT+AYLASTATUS?+CONNSTATUS: <connstatus>, <reason>
OKParameter:<connstatus>, <reason>
(connstatus>, -1:ayla service shut down
0:disconnected)
1:connected on line<reason>
0:no reason
1:conf error
2:time error (time is not synchronized)
3:net error

Examples

AT+AYLASTATUS?
+AYLASTATUS:1,0
ОК

2.5 AT+AYLASEND Send property

AT+AYLASEND So	end property
Write Command	Response
AT+AYLASEND=<	ОК
propname>, <value></value>	Parameter
	< propname> string



<value> depends on diffrent property type,maxlen=1024

Examples

AT+AYLASEND=output,11 OK

2.6 AT+AYLARECV Get property from air

AT+AYLARECV G	et property from air				
READ Command	Response:				
AT+AYLARECV=<	ОК				
propname>	+AYLASET: <propname>, <value></value></propname>				
	Parameter:				
	< propname> string				
	<value> depends on diffrent property type</value>				
Reference	Only work for properties whose direction is "to device"				

Examples

AT+AYLARECV=output OK +AYLASET: output,11

2.7 AT+AYLATEMPLATE SET Local Property Template

AT+AYLATEMPLATE SET Local Property Template					
Write Command	Response				
AT+AYLATEMPLA	ОК				
TE=<	Parameter:				
feature>,[<propnam< th=""><th><feature> string</feature></th></propnam<>	<feature> string</feature>				
e>],[<type>],[<direct< th=""><th>add: add property</th></direct<></type>	add: add property				
>],[<version>]</version>	Para: <propname>,<type>,<direct></direct></type></propname>				
	del: del property				
	Para: <propname> del a property which name=propname</propname>				



	Without para <propname> del all properties those you added</propname>
	oem_host_version:set version
	Para: <version></version>
	<propname> string,maxlen=20</propname>
	<type> int</type>
	0: int
	1:string
	2:bool
	3:float
	<direct> int</direct>
	0:from device
	1:to device
	<version> string,maxlen=20</version>
	dashboard template version value.
Reference	Only work when ayla service shut down;
	Should execute "at+aylacfg=savebackup" command to save template to modem

Examples

AT+AYLATEMPLATE=add,cmd,1,1
OK
AT+AYLATEMPLATE=del,cmd
OK
AT+AYLATEMPLATE=oem_host_version,7600_1.0
OK

2.8 +AYLAFOTA AYLA FOTA Status

+AYLAFOTA AYLA Fota status

AILAPUIA AIL	A Pola status
	Response +AYLAFOTA: <status></status>
	Parameter: <status></status>
	FOTASTART fota start

Examples

+AYLAFOTA: FOTASTART



)

3. Example

Command	Description
AT+CGDCONT=6, "IP","3gnet" OK	Set apn for channel 6.(value depens on diffrent sim card)
AT+CAUTONET=1	
OK	Automatic dial-up Internet (work after
AT+CTZU=1	restart)
OK	
AT+CTZR=1	Make time synchronized (work after restart)
OK	
	Note: These command are optional
at+aylacfg=fdsn,SC000W000017209 OK	Set dsn
at+aylacfg=oem,528225f6	Set oem
OK	
at+aylacfg=model,7600-test	Set model
OK	
at+aylacfg=region,CN	Set region
OK	
<i>at+aylacfg=key</i> ,17b0bdd6fe06f210f7fafc0d2243	Set oem key
1/b3	
UK	Cat multiplicary
CC8EBn45-Ex7cxChDyPrNOPDy84/r0by11PdK	Set publickey
Oct-Bp+32Fx2gx00DyFfNOFDv8+/F90uThak	
OK	
at+avlacfg=fpubkev.2.o6Aizw+O8olg5zabR4pu	
<i>EJ1neB6TGmmwveS0cY4RiWD6Syhq4EhbJzyrr</i>	
VAMzHQtiO0yz6sM/PiH	
OK	
at+aylacfg=fpubkey,3,KRAE94S6x17eyDpULWb	
eBetFIbG1cZKfcqEYXA121i5uXmXVO+o++Ae8	
nkzgSEDM/UdAWBkcuU+x	
ОК	
at+aylacfg=fpubkey,4,8vHyPpDFt4fw6m00FQk	
Lnv5nRJxHNacy9UACDRy8/7ObJoGaXQzeDxW	
7B8aB7lyvzZPubdcNrSVD	
OK	
at+aylacfg=fpubkey,5,N+HXSzGocGHtoPO2v+	
LdIswJOo+3KBOiUAU81zjzLFmNAeoVCQIDA	
QAB	



ОК		
	Set template	
at+aylatemplate=add,bool_in,2,1	Add property	
ОК		
at+aylatemplate=add,bool_out,2,0		
OK		
at+aylatemplate=oem_host_version,test 1.3	Set template version (shuold be same as	
	template version on website)	κ,
at+aylacfg=savebackup	Save config info and template in to modem	
at+aylaservice=1	Open ayla service	
+AVI ASTATUS'I 0		
at+avlasend=bool out. 1	Send property	
OK	Sena property	
At+avlarecv=bool in	Get property value	
OK _	1 1 2	
+AYLASET: bool_in,1		



4. AYLA OTA

4.1 AT commands of the device

Command	Description	
AT+AYLASERVICE=1	Open ayla service	Ν.
OK		\bigcirc
+AYLASTATUS:1,0	Connected to ayla	

4.2 Manage website operations

4.2.1 Upload image version

●日海艾拉								dongran qi	
Ayra sorbea		新的主机固件镜像			×			OEM::Admin	*
2018-05-28 10:12:13	管理门户 / OTA	OEM型号*	7500						
eel OEM简介		44-2+57(UD1)	7000-	lest					
⊕ оем用户		⊗佈/土秤(UKL)							
	创建	版本*	test 1	.4			Q	搜索主MCU固件镜像	
	日 上一页 1-4 of 4	最小版本					展示 1	0 25 50 100	
	U = A + B +	描述						0 20 00 100	
((<u>ж</u>)) ота	描述					最小版本	工作	操作	
╻╽ 数据透视	version update	上传固件镜像*	选择文	件 update_ota.zip				1 🖗 🕂	
1010 数据流	20M				取消保存			⚠і∰тЩ	
夏 移动流	test 1.2	7600-test	test 1.2	05/23/2018 at 10:13				€‱⊥前	
	test 1.1	7600-test	test 1.1	04/25/2018 at 10:23	2132			€‱≵前	
	③ 上一页 1-4 of 4	⊼—页 🕽						创建	
	7								



4.2.2 Create OTA working

●日海艾拉							(dongran qi	~
		创建工作			×		-	OEM::Admin	*
C 2018-05-28 10:14:07	管理门户 / OTA	选择一个设备组:		选择一个选项	•				
EN DEM简介		名称:		选择一个选项 7600test					
CEM用户		28略验证	创建之后开始	SIMCom_yrh	取消 创建				
	创建				_		Q搜	索主MCU固件镜像	
白梅版	●上一页 1-4 of 4	下一页 🔊					展示: 10	25 50 100	
((21) OTA	描述	OEM型号	版本	▼ 上传时问 (UTC)	大小(字节)	最小版本	工作	操作	
■■■ 数据透视	version update	7600-test	test 1.4	05/26/2018 at 4:58	274590			∱ [®] ™	

It needs to select device group when we create OTA working. The device group is created in all devices. According to the filter criteria, such as DSN and the content of the software version (we temporarily use DSN, the content of the software version, the MAC address, and the content of the MAC address is the uid content configured by at+aylacfg command). The filtered result can create a devices group and identifies a set of devices that need to be upgraded.

●日海艾拉 Ayla Sursea	抽壺				v	1		ongran qi EM::Admin
当前的UTC时间 2018-06-06 07:11:42	理门户				^			
Hand DEM简介		通过设备 	通过属性 					
免 оем用户		ID	DSN					
en al de la companya		产品名称					(、搜索设备
┣ 模版	G	软件版本		== •		展示: 10	25	50 100
((4)) ota		类型	型号				m.t.	连接时间
11 数据透视		用户电子邮件	用户ID				用户	(UTC)
1010 数据流		连接状态 ▼	MAC地址			11_180116_V1.00		06/06/2018 at 6:52
寶 移动流		OEM型号				ta ameba-mt2625		06/05/2018
🗳 ITRS		连接后于 (UTC)	连接早于 (UTC)					06/05/2018
		在此后激活 (UTC)	在该时间前激活 (U	TC)		ta ameha-mt2625		at 9:14
e e		在该时间后可激活 (UTC)	在该时间前可激活	(UTC)		0:00 eb21a5844		at 2:54
		唯一的硬件ID	状态	•				05/31/2018 at 11:33
	C						1104	05/01/0010

Create device group



4.2.3 Start OTA working

()日海	艾拉			_											dongran qi
P Pyra				确认							×	-			OEM::Admin
C				确认开始所选	怿的工作吗?	?									
渥									取清	1	8 9				
R								_	_						
8		DIF	全所选内容												Q 搜索OTA工作
ß		G 1	;一页 1-40	f4 下一页 🚺										展示: 10	25 50 100
(((4))					m			10.10.111	+++ /4-115-4-	10	273.522	+ 12	1.55000423		
In Ba			名称	状态	用户	创建时间 (UTC)	类型	镇僚版本	软件版本 (来自)	设备	已通过	未通过	上次更新时间 ▼(UTC)	OTA	操作
1010			test 1.4	C initialized		05/28/2018 at 10:27:36	host_mcu	test 1.4		2			05/28/2018 at 10:27:36		
1010			ota_1.2	C initialized		05/26/2018 at 4:33:10	host_mcu	test 1.2		2	0	0	05/26/2018 at 4:33:10		
*		-	ota_test	O canceled		05/23/2018 at 10:20:44	host_mcu	test 1.2		2	1		05/23/2018 at 10:20:44		Ċ₫
			ota_test	Ø canceled		04/25/2018 at 10:23:27	host_mcu	test 1.1		2	0	0	04/25/2018 at 10:23:27		C ₫

When OTA work starts, as long as the device is in the ayla cloud online state, or the next time the device goes online, the OTA upgrade can be completed automatically.

4.2.4 Check OTA status of the device

			Y			
当前的UTC时间 2018-05-28 10:42:45	管理门户 / OTA / Jobs / 382					
E OEM简介		B	标设备 (2) 未决 (1) 失败 (()) 已完成 (1)		
党 оем用户	OTA工作: test 1.4 2					
日 设备	Ⅲ 设备用户					😢 中止作业
┣ 模版						Q 搜索OTA工作设备
(((2)) OTA	③上─页 1-2 of 2 下─页 ⑤				展示:	10 25 50 100
▶ 数据透视	□ ↓ 状态 ID ▲ DSN	龙岛 一型 是	OFM型是 主机软件版	固件指令	用	连接在 (ITC)
1010 数据流		/ HH <u></u>	本 *	11 Jabov	P	
~~~	397 SC000W000017209	ayla 7600 AY001MRT1	7600-	devd 1.4-eng 2018-05-26 12:35:08		05/28/2018 at
<b>診</b> 移动流		test	test	qidongran/1bae12b+		10:38:10
	3864 SC000W000017459	ayla 7600 AY001MRT1 test	7600- test	devd 1.4-eng 2018-05-18 16:39:12 qidongran/1bae12b+		05/24/2018 at 2:07:17

At the same time, the device that has completed the version update will see the software version change when logging into the ayla cloud again.

#### **4.3 OTA EXAMPLE**

- 1、Upload image version
- 2. Create OTA working and select the corresponding device group
- 3、Start OTA working
- 4. Device side operation (Make sure the device can connect to the network and the local time is right)



Command	Description
AT+CGDCONT=6, "IP","3gnet"	Set APN for channel 6.(value depends on
ОК	different sim card)
AT+CAUTONET=1	
ОК	Automatic dial-up Internet (work after
AT+CTZU=1	restart)
OK	
AT+CTZR=1	
ОК	Make time synchronized (work after restart)
	Note: These commands are optional.
AT+SIMCOMATI	Check version
Manufacturer: SIMCOM INCORPORATED	
Model: SIMCOM_SIM/600CE-T	
Revision: LETTB05SIM/600M22_MIFT	
SIM / 60001422_B05 V 05_18062 /	Warsion value
QCN.	Version value
MEID: &100005309B2&C	
+GCAP·+CGSM	
Device Info: 173.170	
OK	
AT+AYLASERVICE=1	Open ayla service
OK	
+AYLASTATUS:1,0	Connected to ayla
+AYLAFOTA:FOTASTART	Fota start
+AYLASTATUS:0,0	Disconnected with ayla
Device restarts automatically	
AT+SIMCOMATI	Check version
Manufacturer: SIMCOM INCORPORATED	
Model: SIMCOM_SIM7600CE-T	
Revision: LE11B05SIM7600M22_MIFI	
SIM7600M22_B05V05_180628	
QCN:	
IMEI: 861477030781536	Version value changed
MEID: A100005309B2AC	
+GCAP: +CGSM	
Device Info: 173,170	
OK	







#### Contact us:

#### Shanghai SIMCom Wireless Solutions Ltd.

Add: Building B, SIM Technology Building, No.633, Jinzhong Road, Changning District 200335

Tel: +86 21 3157 5100\3157 5200

Email: <a href="mailto:simcom@simcom.com">simcom@simcom</a>, <a href="mailto:simcom@simcom.com">simcom@simcom@simcom</a>, <a href="mailto:simcom@simcom.com">simcom@simcom</a>, <a href="mailto:simcom@simcom.com">simcom@simcom</a>, <a href="mailto:simcom@simcom.com">simcom@simcom</a>, <a href="mailto:simcom.com">simcom@sim.com</a>)</a>

Website: <u>www.simcomm2m.com</u>