DISCLAIMER

SIMCom
A company of SIM Tech

APPLICATION NOTE DETAILS

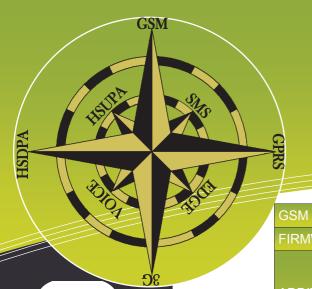|	
GSM DEVICE	SIM900
FIRMWARE	R11.00
ADDITIONAL NOTES	NETWORK INFO IS BASED ON SOUTH AFRICAN NETWORKS / ALL AT COMMANDS MUST BE IN UPPER CASE
COMPILED BY	MARK COXEN
EMAIL	MARK@OTTO.CO.ZA
MOBILE	+27 82 888 6275

Application Note—GPRS Transparent Connection using SIM900 rev01

GSM
HSUPA
SMS
HSDPA
GPRS
VOICE
EDGE
3G

APPLICATION NOTE DETAILS

GSM DEVICE	SIM900
FIRMWARE	R11.00
ADDITIONAL NOTES	NETWORK INFO IS BASED ON PUBLIC NETWORK SPECIFIC APN / GPRS TESTS ON PREPAID SIMS ONLY WORK IN THE SAME NETWORK CELL / GPRS AVAILABILITY IS NETWORK DEPENDENT / WE OFFER A NON GUARANTEED TEST FACILITY / NETWORK ABUSE WILL RESULT IN YOUR DEVICES BEING PURGED BY THE SERVICE PROVIDERS
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GENERAL ENQUIRIES

AT COMMAND	FUNCTION
AT	Must return "OK", use to check comms
ATI	Identifies firmware revision
ATE0	Switches off the echo - 1 enables echo
AT+GMR	Identifies full firmware revision
AT+GMI	Identifies manufacturer
AT+GMM	Identifies module type, i.e. SIM900
AT+GSN	Identifies module IMEI number
AT+CSCA?	Checks the SMS service centre number
AT+CREG?	Acknowledges that the SIM and modem are connected to the network
AT+GCAP	Services offered on Modem -> GSM; FCLASS (Fax); +DS (Data Services)
AT+CMEE=2	Changes error warnings from number codes to text
AT&W	Stores all user settings
AT&V	Checks the settings of the module
AT&F	Reset all settings to manufacturer defaults

SET THE BAUDRATE

AT COMMAND	FUNCTION
AT+IPR=XXXXXXX	Set the Value
* 1200	
* 2400	
* 4800	
* 9600	
* 19200	
* 34800	
* 57600	
* 115200	

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SET THE MODULE TO AUTO REPORT STATUS INFO ON POWER UP

AT COMMAND	FUNCTION
AT+IPR=115200	The baud rate must be set; does not work on Auto Baud
AT+CREG=1	Set the Module to report on network registration query
	<POWER OFF AND POWER UP AGAIN>
RDY	Indicates power key was pressed
+CFUN: 1	Module is on full functionality
+CIPN: READY	Indicates no pin number required, "SIM PIN" will display if pin number is needed
+CREG: 0	Not registered on the network
+CREG: 2	Searching for a network to register to
Call Ready	Ready for Voice and SMS
+CREG: 1	Registered on network

SET MODULE TO AUTO REPORT STATUS AND NETWORK INFO ON POWER UP

AT COMMAND	FUNCTION
AT+IPR=115200	The baud rate must be set; does not work on Auto Baud
AT+CREG=2	Set the Module to report on status and network registration query
	<POWER OFF AND POWER UP AGAIN>
RDY	Indicates power key was pressed
+CFUN: 1	Module is on full functionality
+CIPN: READY	Indicates no pin number required, "SIM PIN" will display if pin number is needed
+CREG: 0	Not registered on the network
+CREG: 2	Searching for a network to register to
Call Ready	Ready for Voice and SMS
+CREG: 1,"009A","2C30"	Registered on network, showing cell ID and Location ID

Application Note—GPRS Transparent Connection using SIM900 rev01

APPLICATION NOTE DETAILS

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SIGNAL STRENGTH

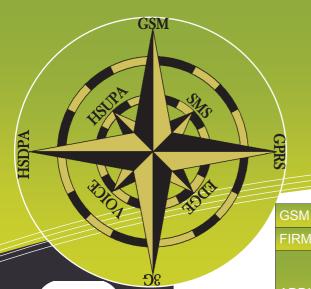| AT COMMAND	FUNCTION
AT+CSQ	Signal Strength
* 0 = -113dBm	
* 1 = -111dBm	
* 2->30 = -109 -> -53dBm	
* 31 = -51dBm	
* 99 = No Reception	
AT+CREG?	Query Network
+CREG: 2,1,"009A","2C3"	
* 2	CREG set to 2
* 1	Registered to the Network
* 009A	Location area code in hex <00><9A>
* 2C30	Cell ID in hex format <2C><30>

QUERY THE SERVICING AND SURROUNDING CELL TOWERS AUTOATICALLY

AT COMMAND	FUNCTION
AT+CENG=2	Switch on engineering mode and send reports
First value:	Servicing Cell
+CENG:0,"0046,52,255,655,01,32,2C30,154,00,000,255"	
* 0	Servicing cell. 1 - 6 are neighbouring cells
* 0046	RF Channel Number
* 52	Receive Level
* 255	Receive Quality
* 655	Mobile Country Code
* 01	Mobile Network Code
* 32	Base Station ID

Application Note—GPRS Transparent Connection using SIM900 rev01

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QUERY THE SERVICING AND SURROUNDING CELL TOWERS AUTOATICALLY

AT COMMAND	FUNCTION
* 2C30	Cell ID in hex format <2C><30>
* 154	Location area code
* 00	Minimum Receive Access level
* 000	Transmit Power Maximum
* 255	Timing advance
Neighbouring Cells	
+CENG:1,"0036,41,14,154"	Cell number / RF channel / Rec Level / Rec Quality
+CENG:2,"0042,40,23,154"	Cell number / RF channel / Rec Level / Rec Quality
+CENG:3,"0052,38,43,153"	Cell number / RF channel / Rec Level / Rec Quality
NOTE	These cells are not within reception
+CENG:4,"65535,255,00,0"	
+CENG:5,"65535,255,00,0"	
+CENG:6,"65535,255,00,0"	

DEACTIVATE ENGINEERING MODE

AT COMMAND	FUNCTION
AT+CENG=0	Deactivates engineering mode

QUERY SERVICING AND SURROUNDING CELL TOWERS MANUALLY

AT COMMAND	FUNCTION
AT+CENG=1	Switch on Engineering Mode
AT+CENG?	Issue the query instruction each time you want the tower info
+CENG:1,0	
Servicing Cell	
+CENG:0,"0046,51,255,655,01,32,2C30,154,00,000,255"	

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QUERY SERVICING AND SURROUNDING CELL TOWERS MANUALLY

AT COMMAND	FUNCTION
Neighbouring Cells	
+CENG:1,"0052,41,43,153"	
+CENG:2,"0036,42,14,0"	
+CENG:3,"0042,41,23,0"	
No Cells Available	
+CENG:4,"65535,255,00,0"	
+CENG:5,"65535,255,00,0"	
+CENG:6,"65535,255,00,0"	