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AT Command Interface Description

## ACI - Application Control Interface

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Add %CGTFT command to support TFT parameter list.			
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Add %CGEQREQ command to support the QOS parameters: source statistic descriptor and signalling indication.			
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Added: dependency conditions for commands as applies.

## 0.2 References, Abbreviations, Terms

[GSM 07.05]GTS 07.05: January 1998 (GSM 07.05 version 5.5.0) Use of Data Terminal Equipment - Data Circuit terminating Equipment (DTE - DCE) interface for Short Message Service (SMS) and Cell Broadcast Service (CBS), ETSI

[GSM 07.07]ETS 300 916: February 1998 (GSM 07.07 version 5.5.0) AT command set for GSM Mobile Equipment (ME)

[UMTS 27.007] Universal Mobile Telecommunications System (UMTS); AT command set for 3G User Equipment (UE) (3GPP TS 27.007 version 5.4.0 Release 5)

[T.32] T.32 (08/95) Asynchronous facsimile DCE control - service class 2, ITU

[T V.25\_TER](ITU-T V.25 ter, 1997) ITU-T Recommendation V.25 ter; Series V: data communication over the telephone network; Interfaces and voiceband modems; Serial asynchronous automatic dialing and control, ITU

[TI 8411\_802] ACI - Application Control Interface, Functional Interface Description, Texas Instruments

[TI 8410\_001] G23 Product Description, Texas Instruments

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## 1 Introduction

This document lists the AT commands specified and supported by the Texas Instruments Layer 2/3 Protocol Stack. The commands are specified either by different standardization bodies (e.g. ETSI) or by Texas Instruments as specific proprietary commands.

The specifications valid for this version of the document are listed below.

Specification	Description	Version
3G TS 27.005	Use of Data Terminal Equipment - Data Circuit terminating; Equipment (DTE - DCE) interface for Short Message Service (SMS) and Cell Broadcast Service (CBS) (Release 1999)	V3.1.0 (2000-01)
ETSI TS 07.05	Use of Data Terminal Equipment - Data Circuit terminating Equipment (DTE - DCE) interface for Short Message Service (SMS) and Cell Broadcast Service (CBS) (Release 1997)	6.0.0 (1999-04)
3G TS 27.007	AT command set for 3GPP User Equipment (UE) (Release 1999)	V3.3.0 (1999-12)
ETSI TS 07.07	AT command set for GSM Mobile Equipment (ME) (Release 1997)	6.5.0 (2001-03)
ITU-T V25ter	ITU-T Recommendation V.25 ter; Series V: data communication over the telephone network; Interfaces and voiceband modems; Serial asynchronous automatic dialing and control, ITU	V25ter (1997-07)
ITU-T.32	T.32 (08/95) Asynchronous facsimile DCE control - service class 2, ITU	T.32 (1996-07)
TI AT CMDS	Texas Instruments Specific AT Command Set	8415.052.00.005

## 2 Standardized AT Commands

The description is split into several parts each related to the relevant recommendations.

The tables contain the following information:

Column	Description	Values
AT Command	AT Command name	
Description	short functionality description	
Chapter	chapter of referenced standard or specification	
Group	G23 functionality group	
St	standard scope	M: mandatory O: optional
Sc	Texas Instruments implementation scope:	F: full functionality, command is implemented according the relevant standard or specification. P: part of the functionality is implemented, see the referenced section in the Co column for further details about the functionality. N: command is not supported.
Co	Comments on partially supported or non-supported AT Commands	Reference to a section following the table with more details about the implementation.

### 2.1 Commands specified by GSM Rec. 07.07

#### 2.1.1 General commands

AT Command	Description	Chapter	Group	St	Sc	Co
+CGMI	ME Manufacturer Id	5.1	Equipment information	O	F	1)
+CGMM	ME Model Id	5.2	Equipment information	O	F	1)
+CGMR	ME Revision Number	5.3	Equipment information	O	F	1)
+CGSN	ME Serial Number	5.4	Equipment information	O	F	1)
+CSCS=	Select TE Character Set	5.5	State control	M	P	2)
+CIMI	International Mobile Subscriber Identity	5.6	Equipment information	O	F	
+CMUX=	Multiplexing Mode	5.7	Data Transfer	O	F	4)
+WS46=	Select wireless network	5.9	Network	O	P	3)

- 1) Content is manufacturer specific.
- 2) Supported values for parameter <chset>: "GSM", "IRA", "PCCP437", "PCDN", "8859-1", "HEX", "UCS2"
- 3) Supported values for parameters <n>: 12 ( GSM digital cellular )
- 4) Command available only by UART support.

## 2.1.2 Call control commands

AT Command	Description	Chapter	Group	St	Sc	Co
+CSTA=	Select Type of Address	6.1	Call Control	M	F	
D	Originate Call to Given Phone Number	6.2	Call Control	M	F	
D>	Originate Call Using Phonebook Memory	6.3	Call Control	M	F	
+CMOD=	Call Mode	6.4	Call Control	M	F	
+CHUP	Hang up call	6.5	Call Control	M	F	
+CBST=	Select Bearer Service Type	6.7	Call Control	M	P	1)
+CRLP=	Radio Link Protocol	6.8	Call Control	M	P	2), 3)
+CR=	Service Reporting Control	6.9	Response control	M	F	
+CR:	Service Reporting Control	6.9	Results	M	F	
+CEER	Extended Error Reporting	6.10	Call Control	O	F	
+CRC=	Cellular Result Codes	6.11	Response control	M	F	
+CRING:	Incoming Call Indication	6.11	Results	M	F	
+CSNS	Single Numbering Scheme	6.17	Call Control	O	F	
+CVHU	Voice Hangup Control	6.18	Call Control	O	N	
+CV120	V.120 Rate Adaptation Protocol	6.19	Call Control	O	N	

- 1) Supported baudrates for parameter <speed>: 300 bps, 1200 bps, 2400 bps, 4800 bps, 9600 bps, 14400 bps, 19200 bps, 28800 bps, 32000 bps, 33600 bps, 38400 bps, 48000bps, 56000 bps, 64000 bps  
Supported values for parameter <name>: 0 ( data circuit asynchronous/synchronous (UDI or 3.1 kHz modem), data circuit asynchronous (RDI)
- 2) Only version 1 supported. Parameter <ver> and <T4> not implemented.
- 3) Command available only by supported: GSM-CSD or GPRS or UMTS

## 2.1.3 Network service related commands

AT Command	Description	Chapter	Group	St	Sc	Co
+CNUM	subscriber number	7.1	Network	O	F	
+CREG=	Network registration info	7.2	Network	O	P	1)
+CREG:	network registration	7.2	Results	O	F	
+COPS=	Operator selection	7.3	Network	O	F	3)
+CLCK=	Facility Lock	7.4	Supplementary Services	O	P	2)
+CPWD=	Change Password	7.5	Supplementary Services	O	P	2)
+CLIP=	Calling Line Identification Presentation	7.6	Supplementary Services	O	F	
+CLIP:	calling line identification presentation	7.6	Results	O	F	
+CLIR=	Calling Line Identification Restriction	7.7	Supplementary Services	O	F	
+CLIR:	calling line identification Restriction	7.7	Results	O	F	



AT Command	Description	Chapter	Group	St	Sc	Co
+COLP=	Connected Line Identification Presentation	7.8	Supplementary Services	O	F	
+COLP:	connected line identification presentation	7.8	Results	O	F	
+CCUG=	Closed User Group	7.9	Supplementary Services	O	F	
+CCFC=	Call Forwarding Number and Conditions	7.10	Supplementary Services	O	F	
+CCWA=	Call Waiting	7.11	Supplementary Services	O	F	
+CCWA:	call waiting	7.11	Results	O	F	
+CHLD=	Call Hold and Multiparty	7.12	Supplementary Services	O	F	
+CTFR=	(Explicit) Call Transfer	7.13	Supplementary Services	O	N	
+CUSD	Unstructured Supplementary Service	7.14	Supplementary Services	O	F	
+CAOC	Advice of Charge	7.15	Supplementary Services	O	F	
+CSSN	Supplementary Service Notifications	7.16	Supplementary Services	O	F	
+CLCC	List Current Calls	7.17	Call Control	O	F	
+CPOL	Preferred Operator List	7.18	Network	O	F	4)
+COPN	Read Operator Names	7.19	Network	O	F	

1) Supported values for parameters <n>:

- 0 (disable network registration unsolicited result code)
- 1 (enable network registration unsolicited result code +CREG: <stat>)
- 2 enable network registration and location information unsolicited result code.

2) Supported values for Parameters <fac>:

- "AO" (Barr All Outgoing Calls )
- "OI" (Barr Outgoing International Calls)
- "OX" (Barr Outgoing International Calls except to Home Country)
- "AI" (Barr All Incoming Calls)
- "IR" (Barr Incoming Calls when Roaming outside the home country)
- "AB" (All Barring services)
- "AG" (All outGoing barring)
- "AC" (All inComing barring)
- 
- "SC" (SIM PIN 1)
- "FD" (SIM fixed dialing feature)
- "P2" (SIM PIN 2) <sup>2)</sup>
- "AL" (lock ALS by use of PIN2, nonstandard)
- 
- "PN" (Network Personalisation)
- "PU" (network sUbset Personalisation)
- "PC" (Corporate Personalisation)
- "PP" (service Provider Personalisation)
- "PF" (lock Phone to the very First inserted SIM card) <sup>1)</sup>
- "PS" (PH-SIM, lock PHone to SIM card) <sup>1)</sup>

Note 1: In the current implementation PF and PS share the same password.

Note 2: "P2" is only valid for command +CPWD, but not +CLCK.

- 3) Parameter AcT of set und query commands available only when dual mode supported (GSM/GPRS and UMTS).
- 4) Parameter gsm\_actn, gsm\_compact\_actn, utran\_actn, of the set and query commands available only by 3GPP Release 5 supported.

## 2.1.4 ME control and status commands

AT Command	Description	Chapter	Group	St	Sc	Co
+CPAS	Phone Activity Status	8.1	Phone control	O	F	
+CFUN=	Set Phone Functionality	8.2	Phone control	O	P	1)
+CPIN=	Enter PIN	8.3	Phone control	O	F	
+CBC	Battery Charge	8.4	Phone control	O	F	
+CSQ	Signal Quality and bit error rate	8.5	Phone control	O	P	2)
+CKPD=	keypad control	8.7	Phone control	O	N	
+CIND=	indicator control	8.9	Phone control	O	P	4)
+CMER=	ME event reporting	8.10	Phone control	O	P	5)
+CPBS=	Select Phonebook Memory Storage	8.11	Phonebook control	O	P	3)
+CPBR=	Read Phonebook Entries	8.12	Phonebook control	O	F	
+CPBF=	Find Phonebook Entries	8.13	Phonebook control	O	F	
+CPBW=	Write Phonebook Entries	8.14	Phonebook control	O	F	
+CCLK	Set real time clock date and time.	8.15	Clock	O	P	
+CSIM=	Generic SIM access	8.17	SIM control	O	P	6)
+CRSM	Restricted SIM access	8.18	SIM control	O	F	7), 9)
+CRSL	Ringer Sound Level	8.21	Phone control	O	F	
+CVIB	Vibrator Mode	8.22	Phone control	O	N	
+CLVL	Loudspeaker Volume Level	8.23	Phone control	O	F	
+CMUT	Mute Control	8.24	Phone control	O	F	
+CACM	Accumulated Call Meter	8.25	Phone control	O	F	
+CMM	Accumulated Call Meter Maximum	8.26	Phone control	O	F	
+CPUC	Price per unit and currency table	8.27	Phone control	O	F	
+CCWE	Call Meter maximum event	8.28	Phone control	O	F	
+CSVM	Set Voice Mail Number	8.30	Phone control	O	F	
+CLAE	Set Event	8.31	Phone control	O	F	
+CLAV	Unsolicited Result Code	8.31	Phone control	O	F	
+CLAN	Set language	8.33	Phone control	O	F	
+CLAC	List all available AT commands	8.36	Phone control	O	F	
+CTZU	Time Zone Update	8.40	Phone control	O	F	8)

AT Command	Description	Chapter	Group	St	Sc	Co
+CTZR	Time Zone Update Report Mode	8.41	Phone control	O	F	

- 1) Supported values for parameter <fun>: 0 ( minimum functionality )  
1 ( full functionality )  
4 (disable phone both transmit and receive RF circuits)  
Supported values for parameter <rst>: 0 ( do not reset ME )
- 2) Supported value for parameter <ber>: 99 (unknown or not detectable)
- 3) Supported values for parameter <storage>:  
"FD" fixed numbers  
"BD" SIM barred-dialing phonebook  
"SD" SIM service numbers  
"AD" Abbreviated dialing numbers, redirected to "MT"  
"LR" Last received numbers, redirected to "RC"  
"LD", Last dialed numbers, redirected to "DC"  
"LM" Last missed numbers, redirected to "MC"  
"UD", Own numbers, redirected to "ON"  
"AF" comb. of fixed and abbrev. dialing phonebook
- 4) Supported values for parameter <deser>: "smsfull"  
"signal"
- 5) Supported values for parameter <mode>: (0-2)  
    <keypad>: (0)  
    <disp>: (0)  
    <ind>: (0-2)  
    <bfr>: (0-1)
- 6) For security reasons it is not possible to access GSM applications (GSM instruction class A0) using +CSIM
- 7) If the command UPDATE BINARY or UPDATE RECORD is used, no cached SIM data are updated (e.g. ADN phonebook data)
- 8) This feature is explicitly for Calypso+ and P2 sample
- 9) Parameter pathId of set command available only by 3GPP Release 5 supported.

### 2.1.5 ME errors

AT Command	Description	Chapter	Group	St	Sc	Co
+CMEE=	Report Mobile Equipment Errors	9.1	Response control	M	F	

+CME ERROR: ME error result code	9.2	Results	M	F
----------------------------------	-----	---------	---	---

## 2.1.6 Commands from TIA IS-101

AT Command	Description	Chapter	Group	St	Sc	Co
+FCLASS=	Select mode	C.1		O	P	1)
+VBT=	Buffer threshold setting	C.2		O	N	2)
+VCID=	Calling number ID presentation	C.3		O	N	2)
+VGR=	Receive gain selection	C.4		O	N	2)
+VGT=	Transmit gain selection	C.5		O	N	2)
+VIP=	Initialize voice parameters	C.6		O	N	2)
+VIT=	Inactivity timer	C.7		O	N	2)
+VLS=	Line selection	C.8		O	N	2)
+VRX	Receive data state	C.9		O	N	2)
+VSM=	Select compression method	C.10		O	N	2)
+VTS=	DTMF and Tone Generation	C.11	Audio Functions	O	P	3)
+VTD=	Tone duration	C.12	Audio Functions	O	N	
+VTX	Transmit data state	C.13		O	N	2)

- 1) Only classes 0, 2.0, 8 supported.
- 2) DTE voice interface not supported.
- 3) Fixed tone duration.

## 2.2 Commands specified by GSM Rec. 07.05

### 2.2.1 General configuration commands

AT Command	Description	Chapter	Group	St	Sc	Co
+CSMS=	Select message service	3.2.1	Short Message Services	M	F	
+CPMS=	Preferred Message Storage	3.2.2	Short Message Services	M	P	1)
+CMGF=	SMS format	3.2.3	Short Message Services	M	P	2)
+CESP	Enter SMS Block Mode Protocol	3.2.4	Short Message Services	O	N	3)
+CMS ERROR:	Message Service Failure	3.2.5	Results	M	F	

- 1) Supported values for parameter <mem>: "SM" ( SIM message storage )  
"ME" ( ME message storage )
- 2) Supported values for parameter <mode>: 1 ( text mode )  
0 (PDU mode)(only if compiled with SMS\_PDU\_SUPPORT, in this case command is fully implemented)

3) Block mode not supported.

### 2.2.2 Message configuration commands

AT Command	Description	Chapter	Group	St	Sc	Co
+CSCA=	Service Centre Address	3.3.1	Short Message Services	M	F	
+CSMP=	Set text mode parameters	3.3.2	Short Message Services	M	F	
+CSDH=	Show text mode parameters	3.3.3	Short Message Services	M	F	
+CSCB=	Select Cell Broadcast Message Types	3.3.4	Short Message Services	O	P	1)
+CSAS	Save Settings	3.3.5	Short Message Services	O	F	
+CRES	Restore Settings	3.3.6	Short Message Services	O	F	

1) Supported values for parameter <mids> and <dcss>: maximum of 20 ranges could be declared for each parameter.

### 2.2.3 Message receiving and reading commands

AT Command	Description	Chapter	Group	St	Sc	Co
+CNMI=	New Message Indications to TE	3.4.1	Short Message Services	O	P	1)
+CBM:	New Message Indication	3.4.1	Results	O	F	
+CBMI:	New Message Indication	3.4.1	Results	O	N	3)
+CDS:	New Message Indication	3.4.1	Results	O	F	
+CMT:	New Message Indication	3.4.1	Results	O	F	
+CMTI:	New Message Indication	3.4.1	Results	O	F	
+CMGL=	List Messages	3.4.2	Short Message Services	O	P	2)
+CMGR=	Read Message	3.4.3	Short Message Services	O	P	2)
+CNMA=	New Message Acknowledge	3.4.4	Short Message Services	O	F	

1) Supported values for parameter <mt>: fully implemented  
Supported values for parameter <bm>: 0 ( no CBM indications )  
2 ( directly routing of CBM )  
Supported values for parameter <ds>: 0 ( no status report indications )  
1 ( directly routing of status reports )  
Supported values for parameter <mode>: 0 ( message buffering )  
1 ( message discarding )  
2 ( message flushing after reservation )  
Supported values for parameter <bfr>: fully implemented

2) Storing of CBM, commands and status reports is not supported.

3) Storing of CBM is not supported.

## 2.2.4 Message sending and writing commands

AT Command	Description	Chapter	Group	St	Sc	Co
+CMGS=	Send Message	3.5.1	Short Message Services	O	F	
+CMSS=	Send Message from Storage	3.5.2	Short Message Services	O	F	
+CMGW=	Write Message to Memory	3.5.3	Short Message Services	O	F	
+CMGD=	Delete Message	3.5.4	Short Message Services	O	F	
+CMGC=	Send Command	3.5.5	Short Message Services	O	F	
+CMMS=	More Messages to Send	3.5.6	Short Message Services	O	N	

## 2.3 Commands specified by ITU-T Rec. V25ter as referenced by GSM Rec. 07.07

### 2.3.1 Generic TA control commands

AT Command	Description	Chapter	Group	St	Sc	Co
A/	Repeat previous command	5.2.4	Miscellaneous	M	F	
Z	Set all TA parameters to default configuration.	6.1.1	State control	M	F	
&F	Set all TA parameters to factory defined config.	6.1.2	State control	M	F	
I	Manufacturer Information about TA	6.1.3	Equipment information	O	F	1)
+GMI	TA Manufacturer Id	6.1.4	Equipment information	M	F	1)
+GMM	TA Model Id	6.1.5	Equipment information	M	F	1)
+GMR	TA Revision Number	6.1.6	Equipment information	M	F	1)
+GSN	TA Serial Number	6.1.7	Equipment information	M	F	1)
+GOI	ISO global object identification	6.1.8	Equipment information	O	N	
+GCAP	Request overall capabilities for TA	6.1.9	Equipment information	M	F	1)
+GCI=	Select Country of Installation for the TA	6.1.10	State control	O	N	
S3=	command line termination character	6.2.1	State control	M	F	
S4=	response formatting character	6.2.2	State control	M	F	
S5=	editing char	6.2.3	State control	M	F	
E	Command echo mode	6.2.4	State control	M	F	
Q	result code suppression	6.2.5	State control	M	F	
V	response format	6.2.6	State control	M	F	
X	CONNECT result	6.2.7	State control	M	P	2)
&C	DCD-usage	6.2.8	State control	M	P	3)
&D	DTR-usage	6.2.9	State control	M	P	3)
+IPR=	fixed TE-TA data rate	6.2.10	State control	M	P	4), 7)
+ICF=	TE-TA character framing	6.2.11	State control	O	P	5)
+IFC=	TE-TA local flow control	6.2.12	State control	M	P	6), 7)
+ILRR:	local rate reporting	6.2.13	Results	O	F	
+ILRR=	TE-TA local rate reporting	6.2.13	Response control	O	F	

- 1) Content is manufacturer specific.
- 2) Supported values for parameters <value>:
  - 0 CONNECT Result code is given upon entering online data state. Dial tone and busy detection are disabled
  - 1 CONNECT <text> result code is given upon entering online data state. Dial tone and busy detection are disabled
  - 3 CONNECT <text> result code is given upon entering online data state. Dial tone detection is disabled, and busy detection is enabled.
- 3) If supported by driver.
- 4) Supported values for parameter <rate>: 9600, 14400, 28800, 38400, 57600, 115200, 230400, 460800, 921600 (if supported by driver).
- 5) Supported values for parameter <format>: 1-6 (all valid values except 0 for auto detect)  
If supported by driver.
- Supported values for parameter <parity>: 0-3 (all valid values)  
If supported by driver.
- 6) The values of <DCE\_by\_DTE> and <DTE\_by\_DCE> must be equal.  
Supported values for <DCE\_by\_DTE> and <DTE\_by\_DCE>: 0 ( none )  
1 ( DC1/DC3 on circuit 103/104 )  
2 ( circuit 133/106 )  
If supported by driver.
- 7) Flow control parameters for the set command available only by UART supported.

### 2.3.2 Call control commands and responses

AT Command	Description	Chapter	Group	St	Sc	Co
BUSY (7)	busy signal detected	6.3.1	Results	M	F	
CONNECT	entering data transfer state	6.3.1	Results	M	F	
CONNECT (1)	entering data transfer state	6.3.1	Results	M	F	
ERROR (4)	command abnormally completed; ready	6.3.1	Results	M	F	
NO ANSWER (8)	connection completion timeout	6.3.1	Results	M	F	
NO CARRIER (3)	connection terminated	6.3.1	Results	M	F	
NO DIALTONE (6)	Dial tone not found	6.3.1	Results	M	N	
OK (0)	command successful completed; ready	6.3.1	Results	M	F	
W	Wait for dial tone	6.3.1.6	Call Control	M	N	
T	tone dialing	6.3.2	Call Control	M	F	

AT Command	Description	Chapter	Group	St	Sc	Co
P	pulse dialing	6.3.3	Call Control	M	F	
A	Answer a call	6.3.5	Call Control	M	F	
H	Hook Control	6.3.6	Call Control	M	F	
O	return to data state	6.3.7	Call Control	M	F	
S0=	rings before automatic answer	6.3.8	Call Control	M	F	
S1	retrieve number of rings	-	Call Control	-	F	
S6=	pause before blind dialing	6.3.9	Call Control	M	F	1)
S7=	wait for completion	6.3.10	Call Control	M	F	1)
S8=	dial pause	6.3.11	Call Control	M	F	1)
S10=	hang up delay	6.3.12	Call Control	M	F	1)
L	speaker loudness	6.3.13	State control	M	F	1)
M	speaker mode	6.3.14	State control	M	F	1)

1) Implemented for compatibility reasons but not applicable for GSM.

### 2.3.3 Data compression commands

**Commands availability condition:** GSM-CSD or GPRS or UMTS support, for +DS command V.42bis must also be supported (and).

AT Command	Description	Chapter	Group	St	Sc	Co
+DS=	V.42bis data compression	6.6.1	V.42 Data Compression	O	F	
+DR=	V.42bis data compression reporting	6.6.2	V.42 Data Compression	O	F	
+DR:	V.42bis data compression reporting	6.6.2	Results	O	F	

## 2.4 Commands specified by ITU-T Rec. T.32

### 2.4.1 Action commands

AT Command	Description	Chapter	Group	St	Sc	Co
D	originate call to phone number provided	8.3.1	Call Control	M	F	
A	Answer a call	8.3.2	Call Control	M	F	
+FDT	send a page	8.3.3	Fax Class 2.0	M	F	1)
+FDR	receive a page	8.3.4	Fax Class 2.0	M	F	1)
+FKS	terminate a session, orderly fax abort	8.3.5	Fax Class 2.0	M	F	1)
+FIP	initialize service class 2 parameters	8.3.6	Fax Class 2.0	M	F	1)

1) Commands availability condition: FAX and (GSM-CSD or GPRS or UMTS ) support.



## 2.4.2 DCE responses

AT Command	Description	Chapter	Group	St	Sc	Co
+FCO	Facsimile connection	8.4.1.1	Results	M	F	
+FDM	Transition to data modem operation	8.4.1.2	Results	M	N	1)
+FCS:	Report negotiated session parameters, DCS	8.4.2.1	Results	M	F	
+FTC:	Report remote capabilities, DTC	8.4.2.1	Results	M	F	
+FIS:	Report remote capabilities, DIS	8.4.2.1	Results	M	F	
+FPO	Remote polling indication	8.4.2.2	Results	M	F	
+FTI:	Report remote ID	8.4.2.3	Results	M	F	
+FPI:	Report remote ID	8.4.2.3	Results	M	F	
+FCI:	Report remote ID	8.4.2.3	Results	M	F	
+FNC:	Report NSC frame	8.4.2.4	Results	M	F	
+FNF:	Report NSF frame	8.4.2.4	Results	M	F	
+FNS:	Report NSS frame	8.4.2.4	Results	M	F	
+FPW:	PassWord (sending or polling)	8.4.2.5	Results	M	F	
+FSA:	Destination SubAddress	8.4.2.5	Results	M	F	
+FPA:	Selective polling address	8.4.2.5	Results	M	F	
+FFD	Report file transfer diagnostic frame	8.4.2.6	Results	O	N	
+FPS:	T.30 Phase C page reception	8.4.3	Results	M	P	2)
+FET:	Post page message	8.4.4.1	Results	M	F	
+FVO:	Transition to voice	8.4.4.2	Results	M	N	
+FHS:	Call termination status	8.4.5	Results	M	F	
+FHT:	Report transmitted HDLC frame	8.6.1	Results	M	F	
+FHR:	Report received HDLC frame	8.6.2	Results	M	F	

- 1) Not applicable for GSM
- 2) No T.4 page error detection

## 2.4.3 Services Commands

**Commands availability condition:** FAX and (GSM-CSD or GPRS or UMTS ) support.

AT Command	Description	Chapter	Group	St	Sc	Co
+FCLASS=	Service Class identification and control	8.2.1 to 8.2.3	Fax Class 2.0	M	P	1)
+FCC=	DCE capabilities parameter	8.5.1.1	Fax Class 2.0	M	P	2)
+FIS=	current session parameter	8.5.1.2	Fax Class 2.0	M	P	2)
+FCS?	current session results	8.5.1.3	Fax Class 2.0	M	F	
+FLI=	local facsimile station ID string, TSI/CSI	8.5.1.5	Fax Class 2.0	M	F	
+FPI=	local facsimile station ID, CIG (local polling ID)	8.5.1.5	Fax Class 2.0	M	F	
+FNS=	pass-through non-standard negotiation byte string	8.5.1.6	Fax Class 2.0	O	F	

AT Command	Description	Chapter	Group	St	Sc	Co
+FLP=	indicate document available for polling	8.5.1.7	Fax Class 2.0	M	F	
+FSP=	request to poll	8.5.1.8	Fax Class 2.0	M	F	
+FCR=	capability to receive	8.5.1.9	Fax Class 2.0	O	F	
+FBU=	HDLC frame reporting enable	8.5.1.10	Fax Class 2.0	O	F	
+FNR=	negotiation reporting enable	8.5.1.11	Fax Class 2.0	M	F	
+FAP=	Address & polling capabilities	8.5.1.12	Fax Class 2.0	O	F	
+FSA=	Address & polling frames / subaddress	8.5.1.13	Fax Class 2.0	M	F	
+FPA=	Address & polling frames / polling address	8.5.1.13	Fax Class 2.0	M	F	
+FPW=	Address & polling frames / password	8.5.1.13	Fax Class 2.0	M	F	
+FFD=	file transfer diagnostic message	8.5.1.14	Fax Class 2.0	O	N	
+FIE=	procedure interrupt enable	8.5.2.1	Fax Class 2.0	M	F	
+FPS=	page transfer status	8.5.2.2	Fax Class 2.0	M	F	
+FCQ=	copy quality	8.5.2.3	Fax Class 2.0	M	P	
+FRQ=	receive quality thresholds	8.5.2.4	Fax Class 2.0	O	P	3)
+FAA=	adaptive answer mode	8.5.2.5	Fax Class 2.0	O	N	
+FCT=	phase c timeout	8.5.2.6	Fax Class 2.0	O	P	3)
+FHS?	Call termination status code	8.5.2.7	Fax Class 2.0	O	F	
+FRY=	ECM retry count	8.5.2.8	Fax Class 2.0	O	N	
+FMS=	minimum phase c speed	8.5.2.9	Fax Class 2.0	O	F	
+FND=	NSF message data indication	8.5.2.10	Fax Class 2.0	O	N	
+FIT=	inactivity timeout	8.5.3.1	Fax Class 2.0	M	F	
+FBS?	Report buffer size	8.5.3.2	Fax Class 2.0	O	F	
+FPP=	packet protocol control	8.5.3.3	Fax Class 2.0	M	N	
+FBO=	data bit order	8.5.3.4	Fax Class 2.0	M	F	
+FEA=	phase c received EOL alignment	8.5.3.5	Fax Class 2.0	M	P	3)
+FFC=	image data format conversion	8.5.3.6	Fax Class 2.0	O	P	3)
+FMI	Modem ID, see +GMI V.25ter chapter 6.1.1	Annex A	Fax Class 2.0	M	F	
+FMM	Model ID, see +GMM V.25ter chapter 6.1.5	Annex A	Fax Class 2.0	M	F	
+FMR	Revision ID, see +GMR V.25ter chapter 6.1.6	Annex A	Fax Class 2.0	M	F	
+FLO	flow control, see +IFC V.25ter chapter 6.2.12	Annex A	Fax Class 2.0	M	F	4)

- 1) Only classes 0, 2.0, 8 supported.
- 2) For parameter <DF>, <EC>, <BF> and <JP> only the mandatory values are supported.
- 3) Only mandatory values are supported for the parameters.
- 4) Flow control parameters for the set command available only by UART supported.

### 3 Texas Instruments Specific Commands

AT Command	Description	Chapter	Group	St	Sc	Co
%NRG=	Network registration and service selection	-	Network	-	-	-
%COPN	Read Operator Name	-	Network	-	-	-
%CREG	Network registration	-	Network	-	-	-
%CSCN	Network service change notifications	-	Network	-	-	-
%CACM	Query accumulated call meter using PUCT	-	Phone Control	-	-	
%CAOC	Query current call meter using PUCT	-	Phone Control	-	-	
%PBCF	Phone Book Configuration	-	Phone Control	-	-	-
%CPI=	Call progress information	-	Call Control	-	-	
%CPI:	Call progress information	-	Results	-	-	
%CTV	Call timer value	-	Results	-	-	
%SATC=	Configuration for SIM application toolkit	-	SAT	-	-	6)
%SATI:	Indication of SAT command	-	Results	-	-	-
%SATN:	Notification of commands and responses sent by ACI	-	Results	-	-	-
%SATA:	SAT pending call alert	-	Results	-	-	
%SATE=	Send SAT envelope command	-	SAT	-	-	6)
%SATE:	Indication of SAT envelope response	-	Results	-	-	6)
%SATR=	Send SAT command response	-	SAT	-	-	6)
%SATT=	Terminate SAT command or session	-	SAT	-	-	6)
%WAP	WAP mode activation/deactivation	-	-	-	-	-
%PPP	PPP login and password entries	-	-	-	-	5)
%SNCNT	Query (or reset) the byte counters. (only GPRS)	-	GPRS	-	-	3)
%CPRI	Ciphering indication	-	-	-	-	-
%BAND	Manage dynamically radio bands	-	-	-	-	2)
%CGAATT	Automatic attach and detach mode	-	GPRS	-	-	3)
%CGREG	GPRS extended registration indication	-	GPRS	-	-	3)
%ALS	Set the ALS mode for outgoing calls (voice)	-	Call Control	-	-	-
%CCBS	Controls completion of call on busy subscriber					
%CTTY	Handling TTY	-		-	-	4)
%CUNS	Controls unsolicited messages presentation	-		-	-	-
%CSTAT	Enable/Disable unsolicited status reports from SIM processes	-		-	-	-
%CGCLASS	Sets the specified GPRS mobile class.	-		-	-	3)
%CGPCO	Sets the PCO for context activation	-		-	-	3)
%CGPPP	Sets authentication protocol.	-		-	-	3)
%CBHZ	Activates and deactivates the homezone feature.	-		-	-	7)

%CPHS	Initializes/closes/refreshes the CPHS module.	-	CPHS	-	-	8)
%CPNUMS		-	CPHS	-	-	8)
%CPALS	Manages the CPHS Alternate Line Service.	-	CPHS	-	-	8)
%CPVWI	Sets/clears/queries voice message waiting flags	-	CPHS	-	-	8)
%CPOPEN	Queries operator name string	-	CPHS	-	-	8)
%CPCFU	Sets call forwarding flags	-	CPHS	-	-	8)
%CPINF	Queries cphs information and customer service profile	-	CPHS	-	-	8)
%CPMB	Queries mailbox numbers	-	CPHS	-	-	8)
%CPMBW	Writes CPHS mailbox numbers	-	CPHS	-	-	8)
%DATA	Sets data flow, means to split the data channel (destination) from the AT cmd channel (source)	-		-	-	9)
%DINF	Lists all available data and ATI channels and their capabilities	-		-	-	9)
%CNAP	Calling name presentation control		Supplementary Services			
%CSQ	Controls signal quality presentation					
%ATR	Queries answer to reset SIM information					
%CHPL	Home network information					
%VTS	Start/stop DTMF tones					
%CWUP	Wake up function					
%PVRF	Status of PIN					
%RDL	Automatic call repeat					
%RDLB	Control black list					
%CPRSM	Pause/Resume receiving of short messages		SMS			
%CMGRS	Select auto retransmission mode/ request manual retransmission of last failed SMS		SMS			
%CHLD	extended call related supplementary services		Supplementary Services			
%COLR	Query Setting for Connected Line Restriction		Supplementary Service			
	Supplementary Service					
&W	Stores profiles to FFS	-		-	-	-
Zn	Retrieves user profiles from FFS					
%CTZV	Set the automatic time and date report mode		NITZ			
%CNIV	Set the automatic network name report mode		NITZ			
%CPRIM	Send a system primitive (CONFIG PRIMITIVE)					
%CSSD	Supplementary Service Diagnostic for last disconnected call – TS 24.008 chapter 10.5.3.11		Call Control			
%COPS	Operator selection		Network			
%SECP	Security code		Security			
%SECS	Security code status		Security			
%CUST	Activate MMI Customisation Mode		SAT			
%SATCC	Enable, or Disable, Call or MO Short Msg		SAT			

Control By SIM					
%CSSN	Supplementary Service notification		SAT		
%CPKY	Press Key Indications Activate/Deactivate		Phone Control		
%CKWP	Key was pressed indication		Phone Control		
%DAR	Provides debug information				
%CSNS	Configuring CSD UDI multi media call		Call Control	-	- 10)
%CMOD	Configuring alternating voice/CSD UDI multi media call		Call Control	-	- 10)
%MMCC	CSD UDI multi media call indication		Call Control	-	- 10)
%MMCR	Accept/Reject CSD UDI multi media call		Call Control	-	- 10)
%CGTFT	Set Traffic Flow Template (incl. parameter list)	-	GPRS Commands	-	- 1)
%CGEQREQ	Set QOS parameters (incl. SSD and signalling ind)	-	GPRS Commands	-	- 1)
%EINFO	Configuring for dynamic Engineering Mode data	-	-	-	- 11)
%ESINFO	Configuring for Static Engineering Mode data	-	-	-	- 11)

- 1) Command availability condition: 3GPP Release 5 support and GPRS support or 3GPP Release 5 support and UMTS support.
- 2) umts-band parameter availability condition: Dual Mode (GSM/GPRS and UMTS) support; applies for SET and QUERY commands. For the TEST command UMTS patterns are being shown as supported by the hardware.
- 3) Command availability condition: GPRS or UMTS support.
- 4) Command availability condition: TTY support.
- 5) Command availability condition: TCP/IP or SAT class E support.
- 6) Command availability condition: SIM toolkit support.
- 7) Command availability condition: Home Zone support.
- 8) Command availability condition: Common PCN Handset Specification support.
- 9) Command availability condition: Data calls support.
- 10) Command availability condition: 3GPP Release 5 and UMTS support.
- 11) Command availability condition: Engineering Mode support.

## 4 Standardized GPRS AT Commands

### 4.1 Commands specified by GSM Rec. 27.007

**Commands availability condition:** GPRS or UMTS support.

AT Command	Description	Chapter	Group	St	Sc	Co
+CGDCONT	Define PDP Context	10.1.1	GPRS commands	M	F	1)
+CGSDCONT	Define Secondary PDP Context	10.1.2	GPRS commands	O	F	1)
+CGTFT	Traffic Flow Template	10.1.3	GPRS commands	O	F	
+CGQREQ	Quality of Service Profile (Requested)	10.1.4	GPRS commands	O	F	2)
+CGQMIN	Quality of Service Profile (Minimum acceptable)	10.1.5	GPRS commands	O	F	2)
+CGATT	GPRS attach or detach	10.1.9	GPRS commands	O	F	3)
+CGACT	PDP context activate or deactivate	10.1.10	GPRS commands	O	F	
+CGCMOD	PDP Context Modify	10.1.11	GPRS commands	O	F	
+CGDATA	Enter data state	10.1.12	GPRS commands	O	F	4)
+CGPADDR	Show PDP address	10.1.14	GPRS commands	O	F	
+CGAUTO	Automatic response to a network request for PDP context activation	10.1.15	GPRS commands	O	F	5)
+CGANS	Manual response to a network request for PDP context activation	10.1.16	GPRS commands	O	F	4)
+CGCLASS	GPRS mobile station class	10.1.17	GPRS commands	O	F	6)
+CGEREP	GPRS event reporting	10.1.18	GPRS commands	O	F	8)
+CGREG	GPRS network registration status	10.1.19	GPRS commands	O	P	9)
+CGSMS	Select service for MO SMS messages	10.1.20	GPRS commands	O	F	10)

**Commands availability condition:** (GPRS or UMTS) and 3GPP release 5 support.

+CGEQREQ	3G Quality of Service Profile (Requested)	10.1.6	GPRS commands	O	F	2), 12)
+CGEQMIN	3G Quality of Service Profile (Minimum acceptable)	10.1.7	GPRS commands	O	F	2), 12)

**Commands availability condition:** independent:

D	Request GPRS service	10.2.1.1	Modem compatibility command	O	F	11)
S0	Automatic response to a network request for PDP context activation	10.2.2.1	Modem compatibility command	O	F	
A	Manual acceptance of a network request for PDP context activation	10.2.2.2	Modem compatibility command	O	F	
H	Manual rejection of a network request for PDP context activation	10.2.2.3	Modem compatibility command	O	F	

- 1) Supported values for <PDP\_type>: "IP"
- 2) A special form of the set command, +CGQREQ=,... or +CGQMIN=,... provide a set of the default values of Quality of Service. Profile for new PDP context definitions.
- 3) If parameter <state> is omitted the GPRS attach state will be changed.
- 4) Supported value for <L2P>: "PPP", "IP", "M\_PKT", "M\_IP".
- 5) If parameter <n> is omitted it is assumed to be 3 (modem compatibility mode, GPRS and circuit switched calls).
- 6) If parameter <class> is omitted a detached mobile attach with the last or the default class ("BG").
- 7) X.3 is not supported.
- 8) If parameter <mode> is omitted it is assumed to be the value of the last command execution or the default value (0). If parameter <bfr> is omitted it is assumed to be the value of the last command execution or the default value (0).
- 9) Not supported values for parameter <n>: 2. If parameter <n> is omitted the command do nothing.
- 10) If parameter <service> is omitted the command do nothing.
- 11) Supported values for <GPRS\_SC>: \*99  
Supported values for <L2P>: 1  
The parameter <called\_address> shall be ignored.
- 12) This command can be found also in the table of chapter 4.3 without dependency on "3GPP release 5 support" feature, which is correct.

## 4.2 Texas Instruments Specific GPRS Commands

AT Command	Description	Chapter	Group	St	Sc	Co
S99=	Rings until Automatic Context Rejection	10.2.2.3	GPRS commands	-	F	

## 4.3 Commands specified by UMTS Rec. 27.007

**Commands availability condition:** GPRS or UMTS support.

AT Command	Description	Chapter	Group	St	Sc	Co
+CGDSCONT	Define Secondary PDP Context	10.1.2	GPRS commands	O	F	-
+CGEQREQ	3G Quality of Service Profile (Requested)	10.1.6	GPRS commands	O	F	-
+CGEQMIN	3G Quality of Service Profile (Minimum Acceptable)	10.1.7	GPRS commands	O	F	-
+CGEQNEG	3G Quality of Service Profile (Negotiated)	10.1.8	GPRS commands	O	F	-
+CGCMOD	PDP Context Modify	10.1.11	GPRS commands	O	F	-
+CGTFT	Traffic Flow Template	10.1.3	GPRS commands	O	F	-