GSM Protocol Stack

ACI - Application Control Interface
AT Command Interface Description

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Table of Contents

0 Document Control

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0.2 References

[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)

[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

[C_8411_802] 8411.802.99.104, January, 29, 1999, ACI - Application Control Interface, Functional Interface Description, Condat

[C_8410_001] 8410.001.98.102, September, 18, 1998,
G23 Product Description, Condat

0.3 Abbreviations

ACI	Application Control Interface
DTE	Data Terminal Equipment
MMI	Man Machine Interface

0.4 Terms

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1 Introduction

G23 is a software package implementing Layers 2 and 3 of the ETSI-defined GSM air interface signaling protocol, and as such represents the part of a GSM mobile station's protocol software which is both, platform and manufacturer independent. Therefore, G23 can be viewed as a building block providing standardized functionality through generic interfaces for easy integration.

The G23 suite of products consists of the following items:

- Layers 2 and 3 for speech & short message services,
- Layers 2 and 3 for fax & data services,
- Application Control Interface/AT Command Interface,
- MMI and MMI Framework (MFW) and
- Test and integration support tools.

This document describes the AT Command Interface in detail. This is needed when a terminal (DTE) uses the (character oriented) AT Command Interface via the serial interface.

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	Condat 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	N	
+WS46=	Select wireless network	5.9	Network	O	P	3)

1) Contents 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)

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)
+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	
+CHSD=	HSCSD Device Parameters	6.12	Call Control	O	N	
+CHST	HSCSD Transparent Call Configuration	6.13	Call Control	O	N	
+CHSN	HSCSD Non-transparent Call Configuration	6.14	Call Control	O	N	
+CHSC	HSCSD Current Call Parameters	6.15	Call Control	O	N	
+CHSR	HSCSD Parameters Report	6.16	Call Control	O	N	
+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

Supported values for parameter <name>: 0 (data circuit asynchronous, UDI or 3.1 kHz modem)

2) Only version 1 supported. Parameter <ver> and <T4> not implemented.

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	
+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	
+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	
+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) 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)

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)
+CMEC=	mobile equipment control	8.6	Phone control	O	N	
+CKPD=	keypad control	8.7	Phone control	O	N	
+CDIS=	display control	8.8	Phone control	O	N	
+CIND=	indicator control	8.9	Phone control	O	N	
+CMER=	ME event reporting	8.10	Phone control	O	N	
+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=	Clock	8.15	Phone control	O	N	
+CALA=	Alarm	8.16	Phone control	O	N	
+CSIM=	Generic SIM access	8.17	SIM control	O	N	
+CRSM	Restricted SIM access	8.18	SIM control	O	F	
+CSCC	Secure Control Command	8.19	Phone control	O	N	
+CALM	Alert Sound Mode	8.20	Phone control	O	N	
+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	
+CAMM	Acculmulated 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	0	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	0	F	

1) Supported values for parameter <fun>: 0 (minimum functionality)
1 (full functionality)
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>: "EN" SIM (or ME) emergency number
"FD" SIM fixed-dialling-phonebook
"LD" SIM last-dialling-phonebook
"BD" SIM barred-dialling phonebook
"SD" SIM service numbers
"LR" Last received numbers (nonstandard)
"AD" Abbreviated dialing numbers (nonstandard)
"LM" Last missed numbers (nonstandard)
"AF" comb. of fixed and abbrev. dialling phonebook (nonstandard)

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 impemented)

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)
+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)
+ILRR:	local rate reporting	6.2.13	Results	O	F	
+ILRR=	TE-TA local rate reporting	6.2.13	Response control	O	F	

1) Contents 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>: 300, 1200, 2400, 4800, 9600, 19200, 38400
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.

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	
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	
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

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	
+FDR	receive a page	8.3.4	Fax Class 2.0	M	F	
+FKS	terminate a session, orderly fax abort	8.3.5	Fax Class 2.0	M	F	
+FIP	initialize service class 2 parameters	8.3.6	Fax Class 2.0	M	F	

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

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	
+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	P	3)
+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	P	3)
+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	P	4)
+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	

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) Only value 0 is supported.

3 Condat Specific Commands

AT Command	Description	Chapter	Group	St	Sc	Co
%NRG=	Network registration and service selection	-	Network	-	-	
%CACM	Query accumulated call meter using PUCT	-	Phone Control	-	-	
%CAOC	Query current call meter using PUCT	-	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	-	-	-
%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	-	-	-
%SATE:	Indication of SAT envelope response	-	Results	-	-	-
%SATR=	Send SAT command response	-	SAT	-	-	-
%SATT=	Terminate SAT command or session	-	SAT	-	-	-
%VER	Displays version of entities	-	Results	-	-	-
%WAP	WAP mode activation/deactivation	-	-	-	-	-
%PPP	PPP login and password entries	-	-	-	-	-
%SNCNT	Query (or reset) the byte counters. (only GPRS)	-	GPRS	-	-	-
%CPRI	Ciphering indication	-	-	-	-	-
%BAND	Manage dynamically radio bands	-	-	-	-	-
%CGAATT	Automatic attach mode	-	GPRS	-	-	-
%CGREG	GPRS extended registration indication	-	GPRS	-	-	-
%MTST	Enable/disable traces over AT command channel	-	MTST	-	-	-

4 Standardized GPRS AT Commands

4.1 Commands specified by GSM Rec. 07.07

AT Command	Description	Chapter	Group	St	Sc	Co
+CGDCONT	Define PDP Context	10.1.1	GPRS commands	M	F	1)
+CGQREQ	Quality of Service Profile (Requested)	10.1.2	GPRS commands	O	F	2)
+CGQMIN	Quality of Service Profile (Minimum acceptable)	10.1.3	GPRS commands	O	F	2)
+CGATT	GPRS attach or detach	10.1.4	GPRS commands	O	F	3)
+CGACT	PDP context activate or deactivate	10.1.5	GPRS commands	O	F	4)
+CGDATA	Enter data state	10.1.6	GPRS commands	O	F	5)
+CGPADDR	Show PDP address	10.1.7	GPRS commands	O	F	
+CGAUTO	Automatic response to a network request for PDP context activation	10.1.8	GPRS commands	O	F	6)
+CGANS	Manual response to a network request for PDP context activation	10.1.9	GPRS commands	O	F	5)
+CGCLASS	GPRS mobile station class	10.1.10	GPRS commands	O	F	7)
+CGCLPAD	Configure local triple-X PAD parameters	10.1.11	GPRS commands	O	N	8)
+CGEREP	GPRS event reporting	10.1.12	GPRS commands	O	F	9)
+CGREG	GPRS network registration status	10.1.13	GPRS commands	O	P	10)
+CGSMS	Select service for MO SMS messages	10.1.14	GPRS commands	O	F	11)
D	Request GPRS service	10.2.1.1	Modem compatibility command	O	F	12)
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) It is not possible to omit the parameter <state>.

5) Supported value for <L2P>: “PPP”.

6) If parameter <n> is omitted it is assumed to be 3 (modem compatibility mode, GPRS and circuit switched calls).

7) If parameter <class> is omitted a detached mobile attach with the last or the default class (“BG”).

8) X.3 is not supported.

9) 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).

10) Not supported values for parameter <n>: 2. If parameter <n> is omitted the command do nothing.

11) If parameter <service> is omitted the command do nothing.

12) Supported values for <GPRS_SC>: *99
Supported values for <L2P>: 1
The parameter <called_address> shall be ignored.

4.2 Condat Specific GPRS Commands

AT Command	Description	Chapter	Group	St	Sc	Co
%CGAATT	Automatic attach and detach mode	-	GPRS commands	-	-	