



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

V.250

Supplement 1
(06/2001)

SERIES V: DATA COMMUNICATION OVER THE
TELEPHONE NETWORK

Control procedures

Serial asynchronous automatic dialling and control

**Supplement 1: Various extensions to V.250
basic command set**

ITU-T Recommendation V.250 – Supplement 1

(Formerly CCITT Recommendation)

ITU-T V-SERIES RECOMMENDATIONS
DATA COMMUNICATION OVER THE TELEPHONE NETWORK

General	V.1–V.9
Interfaces and voiceband modems	V.10–V.34
Wideband modems	V.35–V.39
Error control	V.40–V.49
Transmission quality and maintenance	V.50–V.59
Simultaneous transmission of data and other signals	V.60–V.99
Interworking with other networks	V.100–V.199
Interface layer specifications for data communication	V.200–V.249
Control procedures	V.250–V.299
Modems on digital circuits	V.300–V.399

For further details, please refer to the list of ITU-T Recommendations.

ITU-T Recommendation V.250

Serial asynchronous automatic dialling and control

SUPPLEMENT 1

Various extensions to V.250 basic command set

Source

Supplement 1 to ITU-T Recommendation V.250 was prepared by ITU-T Study Group 16 (2001-2004) and approved under the WTSA Resolution 5 procedure on 8 June 2001.

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

INTELLECTUAL PROPERTY RIGHTS

ITU draws attention to the possibility that the practice or implementation of this Recommendation may involve the use of a claimed Intellectual Property Right. ITU takes no position concerning the evidence, validity or applicability of claimed Intellectual Property Rights, whether asserted by ITU members or others outside of the Recommendation development process.

As of the date of approval of this Recommendation, ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementors are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database.

© ITU 2002

All rights reserved. No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from ITU.

CONTENTS

	Page
1 Introduction and scope.....	1
2 Abbreviations.....	1
3 References.....	2
4 Command references	3
4.1 DCE initialization	3
4.2 DCE identification	3
4.3 Service and network identification	4
4.4 Local DTE-DCE port control	4
4.5 Call set-up and call progress monitoring	5
4.6 Dial command (D) modifier characters	6
4.7 Data modem set-up, operation and test.....	6
4.8 Service class 1 facsimile DCE (T.30 protocol in DTE).....	7
4.9 Service class 2 facsimile DCE (T.30 protocol in DCE)	8
4.10 Digital cellular set-up and operation.....	9
4.11 Wireless and analogue cellular set-up and operation.....	11
4.12 Voice DCE set-up and operation	12
4.13 DTE controlled call negotiation.....	14
4.14 Control of V.70 and H.324 terminals	14

ITU-T Recommendation V.250

Serial asynchronous automatic dialling and control

SUPPLEMENT 1

Various extensions to V.250 basic command set

1 Introduction and scope

ITU-T V.250 codifies the most common commands used by DTE to control DCE with asynchronous DTE-DCE connections. ITU-T V.250 also codifies the syntax to be used by standards committees for extending this command set in various ways.

There are now many standards based on this command set using the extended syntax, and more are in development. The committees active in this area include:

Responsible Committee	Reserved Lead-in(s)	Scope
ITU-T Q.13/16	+A, +D, +E, +G, +I, +M, +S, +T, +P	DTE-DCE Protocols/Data Transmission
ITU-T Q.14/16	+F	ITU-T Group 3 Facsimile/Telematic Services
TIA TR-30.2	+A, +D, +E, +G, +I, +M, +S, +T, +W, +P	DTE-DCE Interfaces and Protocols
TIA TR-30.5	+F, +V	T.30 Facsimile Digital Interfaces
TIA TR-45.3	+C	TIA IS-136 TDMA Digital Cellular
TIA TR-45.5	+C	TIA IS-95 Spread Spectrum Digital Cellular
ETSI/SMG/SMG 4	+C	GSM Digital Cellular

This Supplement is a reference document that collects and summarizes information from this work. This Supplement has two purposes:

- Facilitate cooperation between standards bodies;
- Inform developers of communications equipment or software.

This Supplement contains:

- References;
- Tables of commands from various sources, sorted by function.

2 Abbreviations

This Supplement uses the following abbreviations:

ETSI European Telecommunication Standards Institute
GSM Global System for Mobile Communications (ETSI)
SMG Special Mobile Group, a part of ETSI
TIA Telecommunications Industry Association

3 References

Source Committee	Publication ID, date	Title
ITU-T Q.7/16	ITU-T V.250 1999	Serial asynchronous automatic dialling and control (ex V.25 <i>ter</i>)
ITU-T Q.7/16	ITU-T V.251 1998	Procedure for DTE-controlled call negotiation (ex V.25 <i>ter</i> Annex A)
ITU-T Q.7/16	ITU-T V.252 1998	Procedure for control of V.70 and H.324 terminals by a DTE (ex V.25 <i>ter</i> Annex B)
ITU-T Q.7/16	ITU-T V.253 1998	Control of voice-related functions in a DCE by an asynchronous DTE
ITU-T Q.1/8	ITU-T T.31 1995	Asynchronous facsimile DCE control – Service Class 1
ITU-T Q.1/8	ITU-T T.32 1995	Asynchronous facsimile DCE control – Service Class 2
TIA TR-29.2	TIA-578-A 1995	Facsimile Digital Interfaces – Asynchronous Facsimile DCE Control Standard, Service Class 1
TIA TR-29.2	TIA-592 1993	Facsimile Digital Interfaces – Asynchronous Facsimile DCE Control Standard, Service Class 2
TIA TR-30.2	TIA-602 1992	Data Transmission Systems and Equipment – Serial Asynchronous Automatic Dialling and Control
TIA TR-29.2	TIA-605 1993	Facsimile Digital Interfaces – Facsimile DCE-DTE Packet Protocol Standard
TIA TR-30.2	TIA-615 1992	Data Transmission Systems and Equipment – Serial Asynchronous Automatic Dialling and Control – Extended Command Syntax
TIA TR-30.2	TIA-617 1995	Data Transmission Systems and Equipment – In-Band DCE Control
TIA TR-30.2	TIA-678 1998	Data Transmission Systems and Equipment – Serial Asynchronous Automatic Dialling and Control for Character Mode DCE on Wireless Data Services
TIA TR-45.5	TIA IS-99 1995	Data Services Option Standard for Wideband Spread Spectrum Digital Cellular System
TIA TR-29.2	TIA IS-101 1993	Facsimile Digital Interfaces – Voice Control Interim Standard for Asynchronous DCE
TIA TR-30.4	TIA IS-134 1994	Facsimile Digital Interfaces, Amendments to TIA/EIA-592 to Support ITU-T T.30 (1993), Interim Standard
TIA TR-45.3	TIA IS-135 1995	800 MHz Cellular Systems, TDMA Services, Async. Data and FAX
ETSI/SMG SMG4	GSM 07.05 1997	Digital cellular telecommunications system (Phase 2+): Use of Data Terminal Equipment – Data Circuit terminating Equipment (DTE – DCE) interface for Short Message Service (SMS) and Cell Broadcast Service (CBS)
ETSI/SMG SMG4	GSM 07.07 1997	Digital cellular telecommunications system (Phase 2+): AT command set for GSM Mobile Equipment (ME)
ETSI/SMG SMG4	GSM 07.60 version 6.1.1 1998-07	"Digital cellular telecommunications system (Phase 2+); General Packet Radio Service (GPRS); Mobile Station (MS) supporting GPRS" ((ETSI TS 101 356 V6.1.1 (1998-07))

4 Command references

4.1 DCE initialization

Syntax	Reference(s)	Description
Z	6.1.1/V.250 6.1.7/TIA-602	Reset to Default Configuration
&F	6.1.2/V.250 6.1.8/TIA-602	Set to Factory Defined Configuration
+FIP	8.3.6/T.32 8.3.6/TIA-592	Initialize Facsimile Parameters
+VIP	10.1.1/IS-101 10.1.1/V.253	Initialize Voice Parameters

4.2 DCE identification

Syntax	Reference(s)	Description
I	6.1.3/V.250 6.1.10/TIA-602	Request Identification Information
+FMI	8.2.4/TIA-578-A 8.2.4/TIA-592 9.3.1/IS-101	Request Manufacturer Identification
+FMM	8.2.4/TIA-578-A 8.2.4/TIA-592 9.3.2/IS-101	Request Model Identification
+FMR	8.2.4/TIA-578-A 8.2.4/TIA-592 9.3.3/IS-101	Request Revision Identification
+GMI	6.1.4/V.250 4.1.1/IS-131	Request Manufacturer Identification
+GMM	6.1.5/V.250 4.1.2/IS-131	Request Model Identification
+GMR	6.1.6/V.250 4.1.3/IS-131	Request Revision Identification
+GSN	6.1.7/V.250 4.1.4/IS-131	Request Product Serial Number Identification
+GOI	6.1.8/V.250 4.1.5/IS-131	Request Global Object Identification
+CGMI	5.6/IS-99 5.1/GSM07.07	Request Manufacturer Identification
+CGMM	5.6/IS-99 5.2/GSM07.07	Request Model Identification
+CGMR	5.6/IS-99 5.3/GSM07.07	Request Revision Identification
+CGSN	5.6/IS-99 5.4/GSM07.07	Request Product Serial Number Identification
+CGOI	5.6/IS-99	Request Global Object Identification

4.3 Service and network identification

Syntax	Reference(s)	Description
+GCAP	6.1.9/V.250 4.1.6/IS-131 5.6/GSM07.07	Request Complete Capabilities List
+CGCAP	5.6/IS-99	Request Complete Capabilities List
+FCLASS	8.2.1/T.31 8.2.1/TIA-578-A 8.2.1/T.32 8.2.1/TIA-592 5.4/IS-99 9.2.1/IS-101 4.1.42/IS-135 5.2.4.4/TIA-678 9.2.2/V.253	Service Class Identification
+GCI	6.1.10/V.250	Country of Installation
+CAD	5.6.3/IS-99	Query Analogue or Digital Service
+W	5.2.4.1/TIA-678	Compliance Indication
+WS45	5.2.4.2/TIA-678	DTE-side Stack Selection
+WS46	5.2.4.3/TIA-678 5.7/GSM07.07	WDS-side Stack Selection (Wireless Data Service)

4.4 Local DTE-DCE port control

Syntax	Reference(s)	Description
S3	6.2.1/V.250	Command Line Termination Character
S4	6.2.2/V.250	Response Formatting Character
S5	6.2.3/V.250	Command Line Editing Character
E	6.2.4/V.250	Command Echo
Q	6.2.5/V.250	Result Code Suppression
V	6.2.6/V.250	DCE Response Format
X	6.2.7/V.250	Result Code Selection and Call Progress Monitoring Control
&C	6.2.8/V.250	Circuit 109 (Received line signal detector) Behaviour
&D	6.2.9/V.250	Circuit 108 (Data terminal ready) Behaviour
+IPR	6.2.10/V.250 10.4.3/V.253	Fixed DTE Rate
+FPR=	8.5.2/TIA-578-A 8.5.3.2/TIA-592	Local DTE-DCE Serial Port Rate
+VPR	10.4.3/IS-101	Select DTE/DCE Interface Rate
+ICF	6.2.11/V.250	DTE-DCE Character Framing
+IFC	6.2.12/V.250	DTE-DCE Local Flow Control
+FLO=	8.5.1/TIA-578-A 8.5.3.1/TIA-592	Local DTE-DCE Flow Control
+ILRR	6.2.13/V.250	DTE-DCE Local Rate Reporting

Syntax	Reference(s)	Description
+ICLOK	6.2.14/V.250	Select Sync Transmit Clock Source
+ILSD	6.2.15/V.250	Select Long Space Disconnect Option
+IDSR	6.2.16/V.250	Select Data Set Ready Option
+IRTS	6.2.17/V.250	Select Synchronous Mode RTS Option
+IBC	8.3/TIA-617	Control of In-Band Control
+IBM	8.4/TIA-617	In-Band MARK Idle Reporting Control
+FDD=	8.5.3/T.31 8.5.3/TIA-578-A	Double Escape Character replacement control
+FIT=	8.5.4/T.31 8.5.3.1/T.32	DTE Inactivity Time-out
+CIT	5.6/IS-99	Command State Inactivity Timer
+VIT	10.2.3/IS-101 10.2.3/V.253	DTE Inactivity Timer
+FPP	8.5.3/T.32	Facsimile Packet Protocol
+VPP	10.4.2/IS-101 10.4.2/V.253	Voice Packet Protocol
NOTE – All basic format commands listed above are also included in TIA-602.		

4.5 Call set-up and call progress monitoring

Syntax	Reference(s)	Description
D	6.3.1/V.250 6.2/GSM07.07	Dial (for dial command modifiers see 4.6)
T	6.3.2/V.250	Select Tone Dialling
P	6.3.3/V.250	Select Pulse Dialling
A	6.3.5/V.250	Answer
H	6.3.6/V.250	Hook Control
O	6.3.7/V.250	Return to On-line Data State
S0	6.3.8/V.250	Automatic Answer
S6	6.3.9/V.250	Pause Before Blind Dialling
S7	6.3.10/V.250	Connection Completion Time-out
S8	6.3.11/V.250	Comma Dial Modifier Time
S10	6.3.12/V.250	Automatic Disconnect Delay
L	6.3.13/V.250	Monitor Speaker Loudness
M	6.3.14/V.250	Monitor Speaker Mode
+ASTO	6.3.15/V.250	Store Telephone Number
NOTE – All V.250 commands listed above except +ASTO are also included in TIA-602.		

4.6 Dial command (D) modifier characters

Syntax	Reference(s)	Description
,	6.3.1.2/V.250	Pause during dialling
T	6.3.1.3/V.250	Select tone dialling
P	6.3.1.4/V.250	Select pulse dialling
!	6.3.1.5/V.250	Register recall/hook flash
W	6.3.1.6/V.250	Wait for dial tone
@	6.3.1.7/V.250	Wait for quiet answer
S=<location>	6.3.1.8/V.250	Invoke stored string at <location>
;	6.3.1/V.250	dial string terminator – make call and remain in command mode
;	6.2/GSM07.07	dial string terminator – make voice call and remain in command mode
>	6.2/GSM07.07	Direct Dialling from Phone Book
G, g	6.2/GSM07.07	Control the CUG supplementary service for this call
I, i	6.2/GSM07.07	Override Calling Line Identification Restriction (CLIR) supplementary service subscription default value for this call

4.7 Data modem set-up, operation and test

Syntax	Reference(s)	Description
+MS	6.4.1/V.250	Modulation Selection
+MA	6.4.2/V.250	Modulation Automode Control
+MR	6.4.3/V.250	Modulation Reporting Control
+MV18S	6.4.4/V.250	V.18 Selection
+MV18R	6.4.5/V.250	V.18 Reporting Control
+MV18AM	6.4.6/V.250	V.18 Answering Message editing
+MV18P	6.4.7/V.250	V.18 Order of Probes
+ES	6.5.1/V.250	Error Control Selection
+EB	6.5.2/V.250	Break Handling in Error Control operation
+ESR	6.5.3/V.250	Selective Repeat
+EFCS	6.5.4/V.250	32-bit Frame Check Sequence
+ER	6.5.5/V.250	Error Control Reporting
+ETBM	6.5.6/V.250	Call Termination Buffer Management
+EWIND	6.5.7/V.250	Window Size
+EFRAM	6.5.8/V.250	Frame Length
+DS	6.6.1/V.250	Data Compression
+DS44	6.6.2/V.250	V.44 Data Compression
+DR	6.6.3/V.250	Data Compression Reporting
+TE140	6.7.2.1/V.250	Enable Ckt 140
+TE141	6.7.2.2/V.250	Enable Ckt 141

Syntax	Reference(s)	Description
+TERDL	6.7.2.3/V.250	Enable RDL From Remote
+TEPDL	6.7.2.4/V.250	Enable Front Panel RDL
+TEPAL	6.7.2.5/V.250	Enable Front Panel Analogue Loop
+TALS	6.7.2.6/V.250	Analogue Loop Status
+TDLS	6.7.2.7/V.250	Local Digital Loop Status
+TRDLS	6.7.2.8/V.250	Remote Digital Loop Status
+TADR	6.7.2.9/V.250	Local V.54 Address
+TMODE	6.7.2.10/V.250	Set V.54 Mode
+TTER	6.7.2.11/V.250	Test Error Rate
+TNUM	6.7.2.12/V.250	Errored Bit and Block Counts
+TLDL	6.7.2.13/V.250	Local Digital Loop
+TRDL	6.7.2.14/V.250	Request Remote Digital Loop
+TAL	6.7.2.15/V.250	Local Analogue Loop
+TSELF	6.7.2.16/V.250	Self Test
+TRES	6.7.2.17/V.250	Self Test Result
+PCW	6.8.1/V.250	Call Waiting Enable (V.92 DCE)
+PMH	6.8.2/V.250	Modem on Hold enable
+PMHT	6.8.3/V.250	Modem on Hold Timer
+PMHR	6.8.4/V.250	Initiate Modem on Hold
+PIG	6.8.5/V.250	PCM upstream Ignore
+PMHF	6.8.6/V.250	V.92 Modem on Hold Hook Flash
+PQC	6.8.7/V.250	V.92 Phase 1 and Phase 2 Control
+PSS	6.8.8/V.250	V.92 Use Short Sequence
+TMO	6.9/V.250	V.59 Command

4.8 Service class 1 facsimile DCE (T.30 protocol in DTE)

Syntax	Reference(s)	Description
+FTS	8.3.1/T.31	Stop transmission and pause
+FRS	8.3.2/T.31	Wait for silence
+FTM	8.3.3/T.31	Transmit data with <MOD> carrier
+FRM	8.3.4/T.31	Receive data with <MOD> carrier
+FTH	8.3.5/T.31	Transmit HDLC data with <MOD> carrier
+FRH	8.3.6/T.31	Receive HDLC data with <MOD> carrier
+FAR	8.5.1/T.31	Adaptive Reception Control
+FCL	8.5.2/T.31	Carrier Loss Timeout
NOTE – All T.31 commands except +FAR and +FCL are included in TIA-578-A.		

4.9 Service class 2 facsimile DCE (T.30 protocol in DCE)

Syntax	Reference(s)	Description
+FDT	8.3.3/T.32	Data Transmission command
+FDR	8.3.4/T.32	Data Reception command
+FKS	8.3.5/T.32	Session Termination command
+FCC=	8.5.1.1/T.32	DCE capabilities parameters
+FIS=	8.5.1.2/T.32	Current Session parameters
+FCS?	8.5.1.3/T.32	Current Session Results parameters
+FLI=	8.5.1.5/T.32	Local ID String parameter, TSI or CSI
+FPI=	8.5.1.5/T.32	Local Polling ID String parameter
+FNS=	8.5.1.6/T.32	Non-Standard Frame FIF parameter
+FLP=	8.5.1.7/T.32	Indicate Document to Poll parameter
+FSP=	8.5.1.8/T.32	Request to Poll parameter
+FCR=	8.5.1.9/T.32	Capability to Receive parameter
+FBU=	8.5.1.10/T.32	HDLC Frame Reporting parameter
+FNR=	8.5.1.11/T.32	Negotiation Message Reporting control parameters
+FAP=	8.5.1.12/T.32	Addressing and Polling capabilities parameter
+FPA=	8.5.1.13/T.32	Selective Polling Address parameter
+FPW=	8.5.1.13/T.32	PassWord parameter (Sending or Polling)
+FSA=	8.5.1.13/T.32	SubAddress parameter
+FFD=	8.5.1.14/T.32	File Diagnostic Message parameter
+FIE=	8.5.2.1/T.32	Procedure Interrupt Enable parameter
+FPS=	8.5.2.2/T.32	Page Status parameter
+FCQ=	8.5.2.3/T.32	Copy Quality Checking parameter
+FRQ=	8.5.2.4/T.32	Receive Quality Thresholds parameters
+FAA=	8.5.2.5/T.32	Adaptive Answer parameter
+FCT=	8.5.2.6/T.32	DTE Phase C Timeout parameter
+FHS?	8.5.2.7/T.32	Call Termination Status parameter
+FRY=	8.5.2.8/T.32	ECM Retry Value parameter
+FMS=	8.5.2.9/T.32	Minimum Phase C Speed parameter
+FND=	8.5.2.10/T.32	Non-Standard Message Data Indication parameter
+FBS?	8.5.3.2/T.32	Buffer Size, read only parameter
+FBO=	8.5.3.4/T.32	Phase C Data Bit Order
+FEA=	8.5.3.5/T.32	Phase C Received EOL alignment parameter
+FFC=	8.5.3.6/T.32	Format Conversion parameter
NOTE – All T.32 commands except +FND and +FIT are included in either TIA-592 or TIA IS-134.		

4.10 Digital cellular set-up and operation

Syntax	Reference(s)	Description
+CBC	4.1.21/IS-135 5.6/IS-99 8.4/GSM07.07	Battery Charge
+CCS	4.1.22/IS-135	Compression Status
+CMM	4.1.23/IS-135	Menu Map
+COS	4.1.24/IS-135	Originating Service
+CQD	4.1.25/IS-135	Query Disconnect Timer
+CRC	4.1.26/IS-135 5.6.7/IS-99 6.11/GSM07.07	Cellular Result Codes
+CSQ	4.1.27/IS-135 8.5/GSM07.07	Signal Quality
+CSS	4.1.28/IS-135	Serving System Identification
+CTA	4.1.29/IS-135	MT-Terminated Async. Data Calls
+CTF	4.1.30/IS-135	MT-Terminated FAX Calls
+CXT	5.6/IS-99	Cellular Extension
+CFG	5.6/IS-99	Configuration String
+CAD	5.6/IS-99	Query Analogue or Digital Service
+CRM	5.6/IS-99	Set Rm Interface Protocol
+CMIP	5.6/IS-99	Mobile Station IP Address
+CBIP	5.6/IS-99	Base Station IP Address
+CHV	5.6/IS-99	Hang-up Voice
+CDV	5.6/IS-99	Dial Command for Voice Call
+CSCS	5.5/GSM07.07	Select Terminal Equipment Character Set
+CIMI	5.6/GSM07.07	Request International Mobile Subscriber Identity
+CSTA	6.1/GSM07.07	Select Type of Address
+CMOD	6.4/GSM07.07	Call Mode
+CHUP	6.5/GSM07.07	Hangup Call
+CBST	6.7/GSM07.07	Select Bearer Service Type
+CRLP	6.8/GSM07.07	Radio Link Protocol
+CR	6.9/GSM07.07	Service Reporting Control
+CEER	6.10/GSM07.07	Extended Error Report
+CHSD	6.12/GSM07.07	HSCSD Device Parameters
+CHST	6.13/GSM07.07	HSCSD Transparent Call Configuration
+CHSN	6.14/GSM07.07	HSCSD Non-transparent Call Configuration
+CHSC	6.15/GSM07.07	HSCSD Current Call Parameters
+CSNS	6.16/GSM07.07	Single Numbering Scheme
+CNUM	7.1/GSM07.07	Subscriber Number
+CREG	7.2/GSM07.07	Network Registration
+COPS	7.3/GSM07.07	Operator Selection

Syntax	Reference(s)	Description
+CLCK	7.4/GSM07.07	Facility Lock
+CPWD	7.5/GSM07.07	Change Password
+CLIP	7.6/GSM07.07	Calling Line Identification Presentation
+CLIR	7.7/GSM07.07	Calling Line Identification Restriction
+COLP	7.8/GSM07.07	Connected Line Identification Presentation
+CCUG	7.9/GSM07.07	Closed User Group
+CCFC	7.10/GSM07.07	Call Forwarding Number and Conditions
+CCWA	7.11/GSM07.07	Call Waiting
+CHLD	7.12/GSM07.07	Call Related Supplementary Services
+CTFR	7.13/GSM07.07	Call Deflection
+CUSD	7.14/GSM07.07	Unstructured Supplementary Service Data
+CAOC	7.15/GSM07.07	Advice of Charge
+CSSN	7.16/GSM07.07	Supplementary Service Notifications
+CLCC	7.17/GSM07.07	List Current Calls
+CPAS	8.1/GSM07.07	Phone Activity Status
+CFUN	8.2/GSM07.07	Set Phone Functionality
+CPIN	8.3/GSM07.07	Enter PIN
+CMEC	8.6/GSM07.07	Mobile Equipment Control Mode
+CKPD	8.7/GSM07.07	Keypad Control
+CDIS	8.8/GSM07.07	Display Control
+CIND	8.9/GSM07.07	Indicator Control
+CMER	8.10/GSM07.07	Mobile Equipment Event Reporting
+CPBS	8.11/GSM07.07	Select Phone Book Memory Storage
+CPBR	8.12/GSM07.07	Read Phone Book Entries
+CPBF	8.13/GSM07.07	Find Phone Book Entries
+CPBW	8.14/GSM07.07	Write Phone Book Entry
+CCLK	8.15/GSM07.07	Clock
+CALA	8.16/GSM07.07	Alarm
+CSIM	8.17/GSM07.07	Generic SIM Access
+CRSM	8.18/GSM07.07	Restricted SIM Access
+CSCC	8.19/GSM07.07	Secure Control Command
+CMEE	9.1/GSM07.07	Report Mobile Equipment Error
+CSMS	3.2.1/GSM07.05	Select Message Service
+CPMS	3.2.2/GSM07.05	Preferred Message Storage
+CMGF	3.2.3/GSM07.05	Message Format
+CESP	3.2.4/GSM07.05	Enter SMS Block Mode Protocol
+CSCA	3.3.1/GSM07.05	Service Centre Address
+CSMP	3.3.2/GSM07.05	Set Text Mode Parameters
+CSDH	3.3.3/GSM07.05	Show Text Mode Parameters
+CSCB	3.3.4/GSM07.05	Select Cell Broadcast Message Types

Syntax	Reference(s)	Description
+CSAS	3.3.5/GSM07.05	Save Settings
+CRES	3.3.6/GSM07.05	Restore Settings
+CNMI	3.4.1/GSM07.05	New Message Indications to Terminal Equipment
+CMGL	3.4.2/GSM07.05 4.1/GSM07.05	List Messages
+CMGR	3.4.3/GSM07.05 4.2/GSM07.05	Read Message
+CNMA	3.4.4/GSM07.05 4.6/GSM07.05	New Message Acknowledgement to Terminal Adapter
+CMGS	3.5.1/GSM07.05 4.3/GSM07.05	Send Message
+CMSS	3.5.2/GSM07.05 4.7/GSM07.05	Send Message from Storage
+CMGW	3.5.3/GSM07.05 4.4/GSM07.05	Write Message to Memory
+CMGD	3.5.4/GSM07.05	Delete Message
+CMGC	3.5.5/GSM07.05 4.5/GSM07.05	Send Command
+CMMS	3.5.6/GSM07.05	More Messages to Send
+CGACT	10.2.5/GSM07.60	Packet Data Protocol (PDP) context activate or deactivate
+CGANS	10.2.9/GSM07.60	Manual response to a network request for PDP context activation
+CGATT	10.2.4/GSM07.60	GPRS attach or detach
+CGAUTO	10.2.8/GSM07.60	Automatic response to a network request for PDP context activation
+CGCLASS	10.2.10/GSM07.60	GPRS mobile station class
+CGCLPAD	10.2.11/GSM07.60	Configure local triple-X PAD parameters
+CGDATA	10.2.6/GSM07.60	Enter data state
+CGDCONT	10.2.1/GSM07.60	Define PDP context
+CGEREP	10.2.12/GSM07.60	Control unsolicited GPRS event reporting
+CGPADDR	10.2.7/GSM07.60	Show PDP address
+CGQMIN	10.2.3/GSM07.60	Quality of service profile (minimum acceptable)
+CGQREQ	10.2.2/GSM07.60	Quality of service profile (requested)

4.11 Wireless and analogue cellular set-up and operation

Syntax	Reference(s)	Description
+WS50	B.3.1.1/TIA-678	Normalized Signal Strength
+WS51	B.3.1.2/TIA-678	Carrier Detect Signal Threshold
+WS52	B.3.1.3/TIA-678	Normalized Battery Level
+WS53	B.3.1.4/TIA-678	Normalized Channel Quality
+WS54	B.3.1.5/TIA-678	Carrier Detect Channel Quality Threshold
+WS56	B.3.1.6/TIA-678	Registration Status

Syntax	Reference(s)	Description
+WS57	B.3.1.7/TIA-678	Antenna Preference
+WS58	B.3.1.8/TIA-678	Idle Time-out Value
+WCID	B.3.2.1/TIA-678	Display System ID (operator)
+WCPN	B.3.2.2/TIA-678	Set Personal Identification Number
+WCLK	B.3.2.3/TIA-678	Lock/Unlock DCE
+WCHG	B.3.2.4/TIA-678	Display Battery Charging Status
+WCDA	B.3.2.5/TIA-678	Display Data Link Address
+WCXF	B.3.2.6/TIA-678	Display Supported Annex B commands
+WDAC	C.5.1/TIA-678	Data over Analogue Cellular Command Query
+WSTL	C.5.2/TIA-678	Call Session Time Limit
+WECR	C.5.3/TIA-678	Enable Cellular Result Codes
+WRLK	C.5.4/TIA-678	Roam Lockout
+WFON	C.5.5/TIA-678	Phone Specification
+WBAG	C.5.6/TIA-678	Bias Modem Audio Gain
+WKPD	C.5.7/TIA-678	Keypad Emulation
+WDIR	C.5.8/TIA-678	Phone Number Directory Selection
+WPBA	C.5.9/TIA-678	Phone Battery Query
+WPTH	C.5.10/TIA-678	Call Path

4.12 Voice DCE set-up and operation

Syntax	Reference(s)	Description
+VCID	9.2.3/IS-101 9.2.3/V.253	Caller ID service
+VDID	9.2.4/IS-101 9.2.4/V.253	DID Service
+VNH	9.2.5/IS-101 9.2.5/V.253	Automatic Hang-up Control
+VRX	10.1.2/IS-101 10.1.3/V.253	Receive Data State
+VTS	10.1.3/IS-101 10.1.5/V.253	DTMF and Tone Generation
+VTX	10.1.4/IS-101 10.1.6/V.253	Transmit Data State
+VXT	10.1.5/IS-101	Translate Voice Data
+VGR	10.2.1/IS-101 10.2.1/V.253	Receive Gain Selection
+VGT	10.2.2/IS-101 10.2.2/V.253	Volume Selection
+VLS	10.2.4/IS-101 10.2.4/V.253	Analogue Source/Destination Selection
+VRA	10.2.5/IS-101 10.2.5/V.253	Ringback Goes Away Timer

Syntax	Reference(s)	Description
+VRN	10.2.6/IS-101 10.2.6/V.253	Ringback never appeared timer
+VSD	10.2.7/IS-101 10.2.7/V.253	Silence Detection
+VSM	10.2.8/IS-101 10.2.8/V.253	Compression Method Selection
+VTD	10.2.9/IS-101 10.2.9/V.253	Beep Tone Duration Timer
+VDR	10.3.1/IS-101 10.3.1/V.253	Distinctive Ring Cadence
+VDT	10.3.2/IS-101 10.3.2/V.253	Control Tone Cadence Reporting
+VEM	10.3.3/IS-101	Event Reporting and Masking
+VBT	10.4.1/IS-101	Buffer Threshold Setting
+VAC	4.1/V.252	Set audio code
+VGR	4.2/V.252	Receive gain selection
+VGT	4.3/V.252	Transmit gain selection
+VTD	4.4/V.252	Beep tone duration timer
+VTS	4.5/V.252	DTMF and tone generation
+VRL	4.6/V.252 10.1.2/V.253	Ring local phone
+VSP	4.7/V.252 10.5.1/V.253	Speakerphone ON/OFF
+VTA	4.8/V.252 10.5.4/V.253	Train acoustic echo-canceller
+VTH	4.9/V.252 10.5.5/V.253	Train hybrid echo-canceller
+VDX	4.10/V.252 10.5.5/V.253	Speakerphone configuration
+VPH	4.11/V.252	Phone hookswitch status
+VHC	4.12/V.252	Telephony port hook control
+VRID	9.1.3/V.253	Repeat Caller ID
+VTR	10.1.4/V.253	Voice Duplex
+VGM	10.5.2/V.253	Microphone Gain
+VGS	10.5.3/V.253	Speaker Gain
+VEM	10.5.7/V.253	Event Report

4.13 DTE controlled call negotiation

Syntax	Reference(s)	Description
+A8E	A.5.1/V.251	V.8 and V.8 <i>bis</i> operation controls
+A8M	A.5.2/V.251 A.6.5/V.251	Send V.8 menu signals
+A8T	A.5.3/V.251	Send V.8 <i>bis</i> signal and/or message(s)
+A8I	A.6.1/V.251	V.8, CI signal indication
+A8C	A.6.2/V.251	V.8, Calling tone indication
+A8A	A.6.3/V.251	V.8, Answer signal indication
+A8J	A.6.4/V.251	V.8 Negotiation complete
+A8R	A.6.6/V.251	V.8 <i>bis</i> signal and message reporting

4.14 Control of V.70 and H.324 terminals

Syntax	Reference(s)	Description
+STC	3.1/V.252	Terminal configuration
+STH	3.2/V.252	Close logical channel
+SDC	3.3/V.252	Data configuration
+SAC	3.4/V.252	Audio transmit configuration
+SAM	3.5/V.252	Audio receive mode
+SVC	3.6/V.252	Video transmit configuration
+SVM	3.7/V.252	Video receive mode
+SDR	3.8/V.252	Data indication reporting
+SARR	3.9/V.252	Audio indication reporting
+SVRR	3.10/V.252	Video indication reporting
+SCRR	3.11/V.252	Capabilities indication reporting
+SRSC	5.1.2/V.252	Remote terminal simultaneous capability indication
+SDI	5.2/V.252	Data channel indication
+SAR	5.3/V.252	Audio receive channel indication
+SAT	5.4/V.252	Audio transmit channel indication
+SVR	5.5/V.252	Video receive channel indication
+SVT	5.6/V.252	Video transmit channel indication
+VACR	6.1/V.252	Audio code report
+VCIDR	6.2/V.252	Caller ID report
+VDIDR	6.3/V.252	DID report
+VTER	6.4/V.252	Simple telephony event report

SERIES OF ITU-T RECOMMENDATIONS

Series A	Organization of the work of ITU-T
Series B	Means of expression: definitions, symbols, classification
Series C	General telecommunication statistics
Series D	General tariff principles
Series E	Overall network operation, telephone service, service operation and human factors
Series F	Non-telephone telecommunication services
Series G	Transmission systems and media, digital systems and networks
Series H	Audiovisual and multimedia systems
Series I	Integrated services digital network
Series J	Cable networks and transmission of television, sound programme and other multimedia signals
Series K	Protection against interference
Series L	Construction, installation and protection of cables and other elements of outside plant
Series M	TMN and network maintenance: international transmission systems, telephone circuits, telegraphy, facsimile and leased circuits
Series N	Maintenance: international sound programme and television transmission circuits
Series O	Specifications of measuring equipment
Series P	Telephone transmission quality, telephone installations, local line networks
Series Q	Switching and signalling
Series R	Telegraph transmission
Series S	Telegraph services terminal equipment
Series T	Terminals for telematic services
Series U	Telegraph switching
Series V	Data communication over the telephone network
Series X	Data networks and open system communications
Series Y	Global information infrastructure and Internet protocol aspects
Series Z	Languages and general software aspects for telecommunication systems