AirPrime HL77xx

AT Commands Interface Guide

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Document History

Version	Date	Updates
1.0	April 13, 2017	Creation
1.1	May 10, 2017	Updated initial draft based on team's review
2.0	July 10, 2017	Added: • 2.24 E Command: Enable Echo Command • 5.11 +CPOF Command: Power Off • 5.12 +CPWROFF Command: Power Off • 5.13 +KSLEEP Command: Power Management Control • 5.14 +WESHDOWN Command: Emergency Shutdown • 11 NV Commands
		Updated 4.1 H Command: Disconnect Existing Connection
2.1	July 26, 2017	Fixed typo in section 11 NV Commands
2.2	August 17, 2017	Added: • 2.25 &C Command: Set Data Carrier Detect (DCD) Function Mode • 2.26 &S Command: DSR Override • 3.15 +CMUX Command: Multiplexing Mode • 4.3 %CEER Command: Protocol Error Notification • 5.15 +CPAS Command: Phone Activity Status • 5.16 +CCHO Command: Open Logical Channel • 5.17 +CCHC Command: Close Logical Channel • 5.18 +CTZU Command: Automatic Time Zone Update • 5.19 +CTZR Command: Time Zone Reporting • 6.9 +CPSMS Command: Power Saving Mode Setting • 6.10 +CNUM Command: Subscriber Number • 8 SMS Commands • Table 3 CMS Error Codes
		Updated: • 5.11 +CPOF Command: Power Off • 5.12 +CPWROFF Command: Power Off • Table 2 CME Error Codes
2.3	August 25, 2017	Added 12 Trace Commands
2.4	September 01, 2017	Updated 2.26 &S Command: DSR Override
2.5	September 14, 2017	Updated: • 2.9 &F Command: Restore Factory Settings • 5.18 +CTZU Command: Automatic Time Zone Update • 5.19 +CTZR Command: Time Zone Reporting • 6.6 +CREG Command: Network Registration
2.6	September 18, 2017	Added 3.16 +WIMEI Command: IMEI Write and Read
3.0	October 30, 2017	Added: • 5.20 + WEXTCLK Command: External Clocks Setting • 13.1 +KLWMTOMSEL: LWM2M Instance Selection
4.0	January 12, 2018	Added: • 6.11 %LTEINFO Command: Get LTE Protocol Layer Information • 14 AVMS Commands

Version	Date	Updates
4.0	January 12, 2018	Updated: • 2.12 +IPR Command: Set Fixed Local/DTE Rate • 3.6 +CGSN Command: Request Product Serial Number Identification (IMEI) • 3.10 +GCAP Command: Request Complete TA Capability List • 5.3 +CFUN Command: Set Phone Functionality • 5.5 +CPIN Command: Enter PIN • 6.1 +CLCK Command: Facility Lock • 6.5 +CPWD Command: Change Password • 10.5 +CGDCONT Command: Define PDP Context
5.0	February 28, 2018	Added 10.10 +CGCONTRDP Command: PDP Context Read Dynamic Parameters
		Updated: • 2.2 O Command: Switch from Command Mode to Data Mode • 4.2 D Command: Mobile Originated Call to Dial a Number • 5.19 +CTZR Command: Time Zone Reporting • 6.9 +CPSMS Command: Power Saving Mode Setting • 10.4 +CGTFT Command: Traffic Flow Template • 10.5 +CGDCONT Command: Define PDP Context • 10.6 +CGDSCONT Command: Define Secondary PDP Context
5.1	March 01, 2018	Updated: • 10.5 +CGDCONT Command: Define PDP Context • 10.6 +CGDSCONT Command: Define Secondary PDP Context
6.0	March 26, 2018	Added 7.4 +CPBR Command: Read Phonebook Entries
		Updated: • 2.12 +IPR Command: Set Fixed Local/DTE Rate • 4.1 H Command: Disconnect Existing Connection • 5.3 +CFUN Command: Set Phone Functionality • 5.5 +CPIN Command: Enter PIN • 5.6 +CSQ Command: Signal Quality • 5.14 +WESHDOWN Command: Emergency Shutdown • 6.3 +COPS Command: Operator Selection • 6.4 +CPOL Command: Preferred PLMN List • 6.6 +CREG Command: Network Registration • 6.8 +CEREG Command: EPS Network Registration Status • 6.11 %LTEINFO Command: Get LTE Protocol Layer Information • 10.5 +CGDCONT Command: Define PDP Context
6.1	April 04, 2018	Updated: • 3.15 +CMUX Command: Multiplexing Mode • 10.8 +CGPADDR Command: Show PDP Address
7.0	May 02, 2019	Added 3.17 +KALTCFG Command: Set and Get Custom Configuration

Contents

List of Tables

1. Introduction

1.1. Scope of this Document

This document presents the AT Command Set for the AirPrime HL77xx series of embedded modules. AirPrime HL77xx variants covered in this manual are:

- HL7718
- HL7748
- HL7749

1.2. Reference Configuration

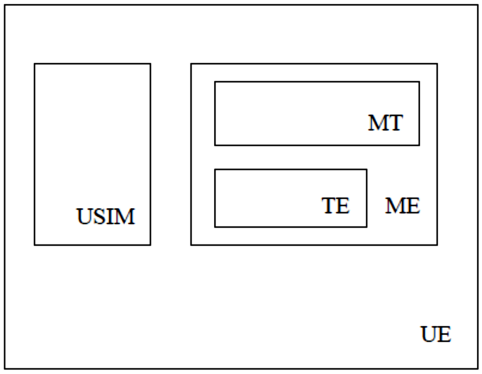


Figure 1. Reference Configuration

The User Equipment (UE) consists of the mobile equipment (ME) and the (U)SIM messages may be stored in either, but the present document does not distinguish between messages stored in the (U)SIM or in the ME. The management of message storage in the two parts of the UE is a matter for the UE implementation.

1.3. AT Command Principles

The "*AT*" or "*at*" prefix must be set at the beginning of each line. To terminate a command line, a <*CR*> character must be inserted.

Commands are usually followed by a response that includes *'<CR><LF><response><CR><LF>'*. Throughout this document, only the responses are indicated, the <CR> and <LF> characters are omitted intentionally.

Four kinds of extended AT commands are implemented as listed in the table below.

Table 1. Types of Extended AT Commands

Command Type	Syntax	Definition
Test Command	AT+CXXX=?	The equipment returns the list of parameters and values ranges set with the corresponding Write command or by internal processes

Command Type	Syntax	Definition
Read Command	AT+CXXX?	This command returns the currently set value of parameters
Write Command	AT+CXXX=<…>	This command sets user-related parameter values
Execution command	AT+CXXX	The execution command reads non-variable parameters affected by internal processes in the equipment

1.3.1. Parameters

In this document, the default parameters are underlined and the optional parameters are enclosed in square brackets.

Optional parameters or sub-parameters can be omitted unless they are followed by other parameters. A parameter in the middle of a string can be omitted by replacing it with a comma.

When the parameter is a character string, the string must be enclosed in quotation marks.

All space characters will be ignored when using strings without quotation marks.

1.3.2. Answers and Responses

There is always an answer sent by the TA to an AT command line.

The answer is always terminated by an indication of success or failure. However, the message may be different depending on the setup of the TA (by AT commands).

Conventional messages:	**OK** or **ERROR**
Extended Error message (see AT+CMEE):	**+CME ERROR: <err>** (See section Table 2 CME Error Codes Appendix for the different values of **<err>**)
Numeric Mode:	**<n>** with <**n**> = 0 or **<n>** is an error code

1.3.3. AT Commands on Separate Lines

When a series of AT commands on separate lines are entered, it is strongly advised to leave a pause between the preceding and the following command until the final answer (**OK** or error message) appears. This avoids sending too many AT commands at a time without waiting for a response for each command sent.

1.4. Document Modification

The commands described in this document are only to be used for normal AT command use.

Information provided for the commands are subject to change without notice.

1.5. Abbreviations

Abbreviation	Definition
ACM	Accumulated Call Meter
ADC	Analog Digital Converter
ADN	Abbreviated Dialing Number (Phonebook)
AMR-FR	AMR Full Rate (full rate speech version 3)
AOC	Advice of Charge
APN	Access Point Name
ARN	Address Resolution Protocol
ARFCN	Absolute Radio Frequency Channel Number
ASCII	American Standard Code for Information Interchange, Standard characters table (1-byte coding)
AT	Attention; Hayes Standard AT command Set
BER	Bit Err Rate
BM	Broadcast Message Storage
CBM	Cell Broadcast Message
CB	Cell Broadcast
CCK	Corporate Control Key
CCM	Current Call Meter
CHV	Card Holder Verification
CHAP	Challenge handshake Authentication Protocol
CI	Cell Identifier
CLI	Client Line Identification
CLIP	Calling Line Identification Presentation
CLIR	Calling Line Identification Restriction
CNL	Cooperative Network List
CODEC	Coder Decoder
COLP	Connected Line Identification Presentation
CPHS	Common PCN Handset Specification
CPU	Central Processing Unit
CSD	Circuit Switched Data
CSP	Customer Service Profile
CTM	Cellular Text telephone Modem
CTS	Clear To Send signal
CUG	Closed User Group
DAC	Digital to Analog Converter
DTR	Data Terminal Ready
DCS	Digital Cellular System
DCE	Data Circuit Equipment
DCD	Data Carrier Detect
DLC	Data Link Connection
DLCI	Data Link Connection Identifier
DM	Device Management

Abbreviation	Definition
DNS	Domain Name System
DSR	Data Set Ready
DTE	Date Terminal Equipment
DTMF	Dual Tone Multi-Frequency
DTR	Data Terminal Ready
ECC	Emergency Call Codes
ECM	Error Correction Mode
EDGE	Enhanced Data rates for GSM Evolution
EF	Elementary Files
EGPRS	Enhanced GPRS
ENS	Enhanced Network Selection
E-ONS	Enhanced Operator Name Service
ERMES	European Radio Messaging System
ETSI	European Telecommunications Standards Institute
FD	FIFO depth
FDN	Fixed Dialing Number (Phonebook)
GERAN	GSM EDGE Radio Access Network
GPIO	General Purpose Input Output
GPRS	General Packet Radio Service
GSM	Global System for Mobile communication
HDLC	High-level Data Link Control
HFR	High Frequency Regeneration
HLR	Home Location Register
HR	Half Rate (half rate speech version 1)
ID	Identifier
IETF	Internet Engineering Task Force
IMEI	International Mobile Equipment Identity
IMSI	International Mobile Subscriber Identity
IN/OUT/IN_OUT	In, out or in/out
I/O	Input/Output
IP	Internet Protocol
LAC	Local Area Code
LED	Light Emitting Diode
LND	Last Number Dialed
LP	Language Preferred
LPI	Lines Per Inch
M	Mandatory
MCC	Mobile Country Code
ME	Mobile Equipment
MMI	Man Machine Interface
MNC	Mobile Network Code
MNP	Microcom Networking Protocol
MO	Mobile Originated

Abbreviation	Definition
MOC	Mobile Originated Call (outgoing call)
MS	Mobile Station
MSB	Most Significant Bit
MSISDN	Mobile Station International ISDN Number
MT	Mobile Terminal
MTC	Mobile Terminated Call (incoming call)
N.A.	Not applicable
NCK	Network Control Key
NITZ	Network Information and Time Zone
NSCK	Network Subset Control Key
NTC	Negative Temperature Coefficient
N.U.	Not used
O	Optional
OA	Outgoing Access
OPL	Operator PLMN List
OS	Operating System
OTA	Over the Air
PAD	Portable Application Description
PAP	Password Authentication Protocol
PC	Personal Computer
PCCP	PC character set Code Page
PCK	Personalization Control Key
PCL	Power Control Level
PCM	Protection Circuit Module
PCN	Personal Communication Network
PCS 1900	Personal Communication Service (GSM system offering 148 full duplex voice channels per cell)
PDP	Packet Data Protocol
PDU	Protocol Description Unit
PIN	Personal Identification Number
PLMN	Public Land Mobile Networks
PNN	PLMN Network Name
PPP	Point-to-Point Protocol/Peer to Peer
PSTN	Public Switched Telephone Network
PTS	Product Technical Specification
PUCT	Price per Unit and Currency Table
PUK	PIN Unlock Key
PWM	Pulse Width Modulation
QoS	Quality of Service
RAM	Random Access Memory
RDMS	Remote Device Management Services
RI	Ring Indicator
RIL	Radio Interface Layer
RLP	Radio Link Protocol

Abbreviation	Definition
RSSI	Received Signal Strength Indication
RTS	Ready To Send signal
RX	Reception
SAP	Service Access Point
SC	Service Center
SDU	Service Data Unit
SIM	Subscriber Information Module
SMSR	Short Message Status Report
SMS	Short Message Service
SS	Supplementary Services
SPCK	Service Provider Control Key
SPN	Service Provider Name
STK	SIM Toolkit
SVN	Software Version Number
TA	Terminal Adaptor
TBF	Temporary Block Flow
TE	Terminal Equipment
TTY	Teletype
TON/NPI	Type Of Number/Numbering Plan Identification
TX	Transmission
UART	Universal Asynchronous Receiver Transmitter
UCS2	Universal Character Set 2 Character table (2-byte coding)
UDUB	User Determined User Busy
UIH	Unnumbered Information with Header check
USB	Universal Serial Bus
USSD	Unstructured Supplementary Service Data

2. V25ter Commands

2.1. +++ Command: Switch from Data Mode to Command Mode

HL7718, HL7748 and HL7749	
Execute command Syntax **+++**	 Response **OK**
Reference V.25ter	Notes • This command is only available during data mode. The **+++** character sequence suspends the data flow over the AT interface and switches to command mode. This allows entering AT commands while maintaining the data connection to the remote device. • To return to data mode, use the **ATO[n]** command. • The **+++** characters are not transmitted in the data flow.

2.2. O Command: Switch from Command Mode to Data Mode

HL7718, HL7748 and HL7749	
Execute command Syntax **ATO[<n>]**	 Response TA returns to data mode from command mode: **CONNECT** If connection is not successfully resumed: **NO CARRIER** If <value> is not recognized or supported: **ERROR** Parameter **<n>** 0 Switch from command mode to data mode
Reference V.25ter	Notes **ATO** is the reverse command to the **+++** escape sequence. When a data call has been established and TA is in command mode, **ATO** causes the TA to resume the data connection and return to data mode.

2.3. S0 Command: Set Number of Rings before Automatic Call Answering

HL7718, HL7748 and HL7749	
Read command Syntax **ATS0?**	 Response **<n>** **OK**
Write command Syntax **ATS0=<n>**	 Response **OK** Parameters **<n>** 0 – 255 Number of rings
Reference V.25ter	Notes The response of this command is compliant with the recommendation, but this command has no effect.

2.4. S2 Command: Set Character for the Escape Sequence (Data to Command Mode)

HL7718, HL7748 and HL7749	
Read command Syntax **ATS2?**	 Response **<n>** **OK**
Write command Syntax **ATS2=<n>**	 Response **OK** Parameters **<n>** only 43 ("+") is supported
Reference V.25ter	Notes The default character is "+" (043) and cannot be changed.

2.5. S3 Command: Command Line Termination Character

HL7718, HL7748 and HL7749	
Read command Syntax **ATS3?**	 Response **<n>** **OK**
Write command Syntax **ATS3=<n>**	 Response **OK** Parameters **<n>** 13 command line termination character <CR>: carriage return
Reference V.25Ter	Notes • This parameter determines the character recognized by TA to terminate an incoming command line (13 = <CR> by default); it cannot be changed. • See data stored by **&W** for default value.

2.6. S4 Command: Set Response Formatting Character

HL7718, HL7748 and HL7749	
Read command Syntax **ATS4?**	 Response **<n>** **OK**
Write command Syntax **ATS4=<n>**	 Response **OK** Parameters **<n>** 10 Response formatting character <LF>: line feed
Reference V.25Ter	Notes • This parameter determines the character recognized by TA to terminate answer line (10 = <LF> by default); it cannot be changed. • See data stored by **&W** for default value.

2.7. S5 Command: Write Command Line Editing Character

HL7718, HL7748 and HL7749	
Read command Syntax **ATS5?**	 Response **<n>** **OK**
Write command Syntax **ATS5=<n>**	 Response **OK** Parameters **<n>** 8 Deletion character (backspace)
Reference V.25Ter	Notes This parameter determines the character recognized by TA to delete the previous character.

2.8. &D Command: Switch from Data Mode to Command Mode

HL7718, HL7748 and HL7749	
Execute command Syntax **AT&D[<value>]**	 Response **OK** Parameter **<value>** 0 TA ignores status on DTR 1 DTR drops from active to inactive. Change to command mode while retaining the connected data call 2 DTR drops from active to inactive. Disconnect data call, change to command mode. Auto-answer is off during DTR inactive state
Reference ITU-T V.250	Notes • When <value>=2, auto-answer is off when UART DTR is inactive. • This command can only be used on UART.

2.9. &F Command: Restore Factory Settings

HL7718, HL7748 and HL7749	
Execute command Syntax **AT&F[<value>]**	 Response **OK** or **ERROR** Parameters **<value>** 0 or Omitted Restore parameters to factory settings Default factory settings for the HL77xx are: E1 Q0 V1 X4 &C1 &D0 &R1 &S0 +IFC= 2,2 &K3 +FCLASS0 S00:0 S01:0 S03:13 S04:10 S05:8 S07:255 S08:0 S10:1
Reference V.25Ter	Notes • Also see **AT&V**. • Restore factory settings to active profile.
Examples	**AT&F** **OK** **AT&F0** **OK** **AT&F1** **ERROR**

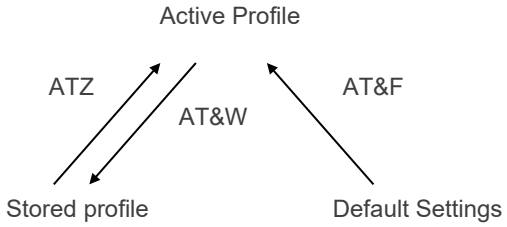
2.10. &W Command: Save Stored Profile

HL7718, HL7748 and HL7749		
Execute command Syntax **AT&W[<value>]**	 Response **OK** Parameter **<value>** 0 or Omitted 1	 Save in STORED PROFILE 0 Save in STORED PROFILE 1

HL7718, HL7748 and HL7749	
Reference V.25Ter	Notes • This command saves the current configuration in a non-erasable place. • Also see **AT&V**. Configurations saved: E Echo Q Set result code presentation mode V Verbose X Extended result code &C DCD control &D DTR behavior &R RTS control &S DSR control +IFC Reflect Flow Control set by AT&K &K Flow control FCLASS FCLASS S0 Set number of rings before automatically answering the call S3 Write command line termination character S4 Set response formatting character S5 Write command line editing character S7 Set number of seconds to wait for connection completion S8 Comma dial modifier time S10 Automatic disconnect delay
Examples	**AT&W** // Save current configuration to Profile 0 **OK** **AT&W0** // Save current configuration to Profile 0 **OK** **AT&W1** // Save current configuration to Profile 1 **OK**

2.11. &V Command: Display Current Configuration

HL7718, HL7748 and HL7749	
Execute command Syntax **AT&V[<value>]**	Response **ACTIVE PROFILE: <current configuration>** **STORED PROFILE 0: <user default configuration>** **STORED PROFILE 1: <manufactory configuration>** **OK** Parameters **<value>** 0 or Omitted All profiles

HL7718, HL7748 and HL7749	
Reference Sierra Wireless Proprietary	Notes • At startup, the latest profile stored with **AT&W** is restored to the Active profile (no restoration if **AT&W** has not been used). • The configuration is a text string on multiple lines as shown in the example below. This string may vary depending on the manufacture, the product and the user setup. • **AT&V** lists **+IFC** and **S01** parameters which are directly editable. **+IFC** answer reflects the flow control parameters set by **AT&K** command.
Example	**E1 Q0 V1 X4 &C1 &D1 &R1 &S0 +IFC= 2,2 &K3 +FCLASS0** **S00:0 S01:0 S03:13 S04:10 S05:8 S07:255 S08:0 S10:1** This command indicates the result of certain actions as shown below: 

2.12. +IPR Command: Set Fixed Local/DTE Rate

HL7718, HL7748 and HL7749	
Test command Syntax **AT+IPR=?**	 Response **+IPR: (**list of supported auto-detectable **<rate>**s**)[,(**list of fixed-only **<rate>**s**)]** **OK**
Read command Syntax **AT+IPR?**	 Response **+IPR: <rate>** **OK**
Write command Syntax **AT+IPR=<rate>**	 Response **OK** or **ERROR** Parameters **<rate>** Rate in bits per second 4800, 9600, 19200, 38400, 57600, 115200 (default value), 230400, 460800
Reference ITU-T V.250	Notes This command only changes Fast UART baud rate.

HL7718, HL7748 and HL7749	
Examples	**AT+IPR=?** **+IPR:(),(4800,9600,19200,38400,57600,115200,230400,460800)** **OK** **AT+IPR?** **+IPR: 115200** **OK** **AT+IPR=1500000** **+CME ERROR: 3**

2.13. B Command: Data Rate Selection

HL7718, HL7748 and HL7749	
Execute command Syntax **ATB<rate>**	Response **OK** Parameters **<rate>** 0 – 99 This parameter takes in values but is meaningless
Reference V.25ter	Notes The response of this command is compliant with the recommendation, but this command has no effect.

2.14. \N Command: Data Transmission Mode

HL7718, HL7748 and HL7749	
Execute command Syntax **AT\N<x>**	Response **OK** Parameters **<x>** 0 Transparent mode 4, 6 RLP mode (non-transparent)
Reference V.25ter	Notes The response of this command is compliant with the recommendation, but this command has no effect.

2.15. &K Command: Flow Control Option

HL7718, HL7748 and HL7749	
Execute command Syntax **AT&K<mode>**	 Response **OK** or **ERROR** Parameters **<mode>** 0 Disable all flow control 3 Enable RTS/CTS flow control
Reference Rockwell Rev4	Notes This command can only be used on UART.

2.16. L Command: Monitor Speaker Loudness

HL7718, HL7748 and HL7749	
Execute command Syntax **ATL[<volume>]**	 Response **OK** Parameter **<volume>** 0 – 9
Reference ITU-T V.250 section 6.3.13	Notes The response of this command is compliant with the recommendation, but this command has no effect.

2.17. M Command: Monitor Speaker Mode

HL7718, HL7748 and HL7749	
Execute command Syntax **ATM[<mode>]**	 Response **OK** Parameter **<mode>** 0 – 9
Reference ITU-T V.250 section 6.3.14	Notes The response of this command is compliant with the recommendation, but this command has no effect.

2.18. S6 Command: Pause before Blind Dialing

HL7718, HL7748 and HL7749	
Write command Syntax **ATS6=<time>**	 Response **OK** Parameter **<time>** 0 – 999
Reference ITU-T V.250 section 6.3.9	Notes The response of this command is compliant with the recommendation, but this command has no effect.

2.19. S8 Command: Comma Dial Modifier Time

HL7718, HL7748 and HL7749	
Read command Syntax **ATS8?**	 Response **<time>** **OK**
Write command Syntax **ATS8=<time>**	 Response **OK** Parameter **<time>** 0 – 255
Reference ITU-T V.250 section 6.3.11	Notes The responses of this command are compliant with the recommendation, but this command has no effect.

2.20. S10 Command: Automatic Disconnect Delay

HL7718, HL7748 and HL7749	
Read command Syntax **ATS10?**	 Response **<time>** **OK**

HL7718, HL7748 and HL7749	
Write command Syntax **ATS10=<time>**	 Response **OK** Parameter **<time>** 1 – 254
Reference ITU-T V.250 section 6.3.12	Notes The responses of this command are compliant with the recommendation, but this command has no effect.

2.21. N Command: Negotiate Handshake Option

HL7718, HL7748 and HL7749	
Execute command Syntax **ATN[<option>]**	 Response **OK** Parameter **<option>** 0 – 9
Notes	The response of this command is compliant with the recommendation, but this command has no effect.

2.22. S1 Command: Ring Count

HL7718, HL7748 and HL7749	
Read command Syntax **ATS1?**	 Response **0** **OK**
Notes	Value “0” is returned but it has no meaning.

2.23. S11 Command: DTMF Dialing Speed

HL7718, HL7748 and HL7749	
Write command Syntax **ATS11=<time>**	 Response **OK** Parameter **<time>** 0 – 999
Notes	The response of this command is compliant with the recommendation, but this command has no effect.

2.24. E Command: Enable Echo Command

HL7718, HL7748 and HL7749	
Execute command Syntax **ATE[<value>]**	 Response **OK** or **ERROR** Parameter **<value>** 0 Echo OFF 1 Echo ON
Notes	• This setting determines whether the TA echoes characters received from the TE in the command state. • <value> is set for all AT ports.

2.25. &C Command: Set Data Carrier Detect (DCD) Function Mode

HL7718, HL7748 and HL7749	
Execute command Syntax **AT&C<value>**	 Response **OK** Parameters **<value>** 0 DCD line is always active 1 DCD line is active in the presence of data carrier only

HL7718, HL7748 and HL7749	
Reference ITU-T V.250	Notes • See data stored by **&W** for default value. • Fast UART only.

2.26. &S Command: DSR Override

HL7718, HL7748 and HL7749	
Execute command Syntax **AT&S<value>**	Response **OK** or **ERROR** Parameter **<value>** 0 DSR will always remain ON 1 DSR will become active after the answer tone has been detected, and inactive after the carrier has been lost
Reference V.25Ter	Note This command selects how the module controls DSR.
Examples	**AT&S0** **OK** **AT&S** **ERROR** **AT&S4** **ERROR**

3. General Commands

3.1. I Command: Request Identification Information

HL7718, HL7748 and HL7749	
Execute command Syntax **ATI[<value>]**	 Response If <value> = 0 or omitted: **<model>** **OK** If <value> = 3: **<version tag>** **OK** If <value> = 9: **<version tag>** **<build date & time>** **OK** Parameters **<model>** Model identifier **<version tag>** Version tag (No Revision) Non-tagged version xHL77xxx…x Tagged version string **<build date & time>** YYYY/MM/DD HH:MM:SS
Reference V.25ter	Examples // Using an HL7749 module **ATI** **HL7749** **OK** **ATI3** **AHL77xx_NQ.01.00.14_0.1.1.20161209.x1210** **OK** **ATI9** **AHL77xx_NQ.01.00.14_0.1.1.20161209.x1210** **2016/12/09 18:04:53** **OK**

3.2. Z Command: Reset and Restore User Configuration

HL7718, HL7748 and HL7749	
Execute command Syntax **ATZ[<value>]**	 Response **OK** Parameter **<value>** 0 Reset and restore user configuration with profile 0 1 Reset and restore user configuration with profile 1
Reference V.25ter	Notes Also see **AT&V**.

3.3. +CGMI Command: Request Manufacturer Identification

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CGMI=?**	 Response **OK**
Execute command Syntax **AT+CGMI**	 Response **(manufacturer identification text)** **OK**
Reference 27.007 section 5.1	Notes Also see **AT+GMI**.
Example	**AT+CGMI** **Sierra Wireless** **OK**

3.4. +CGMM Command: Request Model Identification

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CGMM=?**	 Response **OK**

HL7718, HL7748 and HL7749	
Execute command Syntax **AT+CGMM**	 Response **(model identification text)** **OK**
Reference 27.007 section 5.2	Notes Also see **AT+GMM**.
Example	**AT+CGMM** **HL7749** **OK**

3.5. +CGMR Command: Request Revision Identification

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CGMR=?**	 Response **OK**
Execute command Syntax **AT+CGMR**	 Response **(model revision identification text)** **OK**
Reference 27.007 section 5.3	Notes Also see **AT+GMR**.
Example	**AT+CGMR** **AHL77xx_NQ.01.00.14_0.1.1.20161209.x1210** **OK**

3.6. +CGSN Command: Request Product Serial Number Identification (IMEI)

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CGSN=?**	 Response **+CGSN: (**list of supported **<snt>**s**)** **OK**

HL7718, HL7748 and HL7749	
Execute command Syntax **AT+CGSN [=<snt>]**	Response When <snt>=0 (or omitted) and command is successful: **<sn>** **OK** When <snt>=1 and command is successful: **+CGSN: <imei>** **OK** When <snt>=2 and command is successful: **+CGSN: <imeisv>** **OK** When <snt>=3 and command is successful: **+CGSN: <svn>** **OK** or **+CME ERROR: <err>** Parameters **<snt>** 0 Returns the IMEI 1 Returns the IMEI 2 Returns the IMEISV 3 Returns the SVN **<sn>, <imei>** International Mobile Station Equipment Identity **<imeisv>** International Mobile Station Equipment Identity and Software Version Number **<svn>** Software Version Number
Reference	27.007 Rev11

3.7. +KGSN Command: Request Product Serial Number and Software Version

HL7718, HL7748 and HL7749	
Test command Syntax **AT+KGSN=?**	Response **+KGSN:** (list of supported **<number type>**s) **OK**
Write command Syntax **AT+KGSN= <number type>**	Response If <number type> = 0: **+KGSN: <IMEI>** **OK**

HL7718, HL7748 and HL7749	
	If <number type> = 1: **+KGSN: <IMEISV>** **OK** If <number type> = 2: **+KGSN: <IMEISV_STR>** **OK** If <number type> = 3: **+KGSN: <FSN>** **OK** Parameters **<IMEI>** 15 digits IMEI (8 digits for TAC + 6 digits for SNR + 1 check digit) **<IMEISV>** 16 digits IMEISV (8 digits for TAC + 6 digits for SNR + 2 SVN digits) **<IMEISV_STR>** Formatted string: <15 digits>-<Check digit> SV: <Software version> **<FSN>** 14 digits Serial Number
Reference Sierra Wireless Proprietary	Notes This command has been developed to provide the IMEI SV and Serial Number through an AT command and it can work with or without SIM card.
Examples	**AT+KGSN=0** **+KGSN: 351578000023006** **OK** **AT+KGSN=1** **+KGSN: 3515780000230001** **OK** **AT+KGSN=2** **+KGSN: 35157800002300-6 SV:01** **OK** **AT+KGSN=3** **+KGSN: UC640400011101** **OK**

3.8. +CSCS Command: Set TE Character Set

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CSCS=?**	 Response **+CSCS:** (list of supported **<chset>**s) **OK**

HL7718, HL7748 and HL7749	
Read command Syntax **AT+CSCS?**	 Response **+CSCS: <chset>** **OK**
Write command Syntax **AT+CSCS=** **[<chset>]**	 Response **OK** Parameter **<chset>** "UCS2" 16-bit universal multiple-octet coded character set (ISO/IEC 10646) "8859-1" ISO 8859 Latin 1-character set "IRA" International reference alphabet "PCCP437" PC character set code page 437
Reference 27.007 Rev12	Notes This command only affects SMS AT commands.

3.9. +CIMI Command: Request International Subscriber Identity

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CIMI=?**	 Response **OK**
Execute command Syntax **AT+CIMI**	 Response **<IMSI>** **OK** or **CME ERROR: <err>** Parameter **<IMSI>** International Mobile Subscriber Identity
Reference	27.007 Rev12

3.10. +GCAP Command: Request Complete TA Capability List

HL7718, HL7748 and HL7749	
Execute command Syntax **AT+GCAP**	 Response **+GCAP: +CLTE-M1** **OK**
Reference	ITU-T V.250

3.11. +GMI Command: Request Manufacturer Identification

HL7718, HL7748 and HL7749	
Test command Syntax **AT+GMI=?**	 Response **OK**
Execute command Syntax **AT+GMI**	 Response **(manufacturer identification text)** **OK**
Reference V.25ter, 27.007 section 5.1	Notes Also see **AT+CGMI**.
Example	**AT+GMI** **Sierra Wireless** **OK**

3.12. +GMM Command: Request Model Identification

HL7718, HL7748 and HL7749	
Test command Syntax **AT+GMM=?**	 Response **OK**
Execute command Syntax **AT+GMM**	 Response **(model identification text)** **OK**

HL7718, HL7748 and HL7749	
Reference V.25ter, 27.007 section 5.2	Notes Also see **AT+CGMM**.
Example	**AT+GMM** **HL7749** **OK**

3.13. +GMR Command: Request Revision Identification

HL7718, HL7748 and HL7749	
Test command Syntax **AT+GMR=?**	 Response **OK**
Execute command Syntax **AT+GMR**	 Response **(model revision identification text)** **OK**
Reference V.25ter, 27.007 section 5.3	Notes Also see **+CGMR**.
Example	**AT+GMR** **AHL77xx_NQ.01.00.14_0.1.1.20161209.x1210** **OK**

3.14. +GSN Command: Request Product Serial Number (IMEI)

HL7718, HL7748 and HL7749	
Test command Syntax **AT+GSN=?**	 Response **OK**
Execute command Syntax **AT+GSN**	 Response **<IMEI>** Identification text for determination of the individual ME **OK**
Reference	V.25ter

3.15. +CMUX Command: Multiplexing Mode

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CMUX=?**	 Response **+CMUX: (**list of supported **<transparency>**s**),(**list of supported **<subset>**s**),(**list of supported **<port_speed>**s**),(**list of supported **<N1>**s**),(**list of supported **<T1>**s**),(**list of supported **<N2>**s**),(**list of supported **<T2>**s**),(**list of supported **<T3>**s**),(**list of supported **<k>**s**)** **OK**
Read command Syntax **AT+CMUX?**	 Response **+CMUX: <transparency>,[<subset>],<port_speed>,<N1>,<T1>,<N2>,<T2>,<T3>[,<k>]** **OK** or **+CME ERROR: <err>**
Write command Syntax **AT+CMUX= <transparency> [,<subset> [,<port_speed> [,<N1>[,<T1> [,<N2>[,<T2> [,<T3>[,<k>]]]]]]]]**	 Response **OK** or **+CME ERROR: <err>** Parameters **<transparency>** 0 Basic option **<subset>** 0 UIH frames used only **<port_speed>** 5 115 200 bit/s **<N1>** 8 – 1500 Maximum frame size. Default value = 31 **<T1>** 1 – 255 Acknowledgement timer in units of 10 milliseconds. Default value = 10 (100 ms) **<N2>** 0 – 100 Maximum number of retransmissions. Default value = 3 **<T2>** 2 – 255 Response timer for the multiplexer control channel in units of 10 milliseconds. Default value = 30 (300 ms). Note that the value of <T2> must be longer than <T1>. **<T3>** 1 – 255 Wake up response timer in seconds. Default value = 10 **<k>** 1 – 7 Window size for Advanced option with Error-Recovery mode. Default value = 2
Reference 27.007 Rev12	Notes Fast UART only.

3.16. +WIMEI Command: IMEI Write and Read

HL7718, HL7748 and HL7749	
Test command Syntax **AT+WIMEI=?**	 Response **OK**
Read command Syntax **AT+WIMEI?**	 Response **+WIMEI: <IMEI>** **OK**
Write command Syntax **AT+WIMEI= <IMEI>**	 Response **+WIMEI: <IMEI>** **OK** Parameter **<IMEI>** 14- or 15-digit IMEI as defined in GSM 23.003. Default IMEI = 012345678901237.
Notes	• The write command can only be used once for IMEI programming. • The IMEI to be written must be different from the default IMEI. • If a 14-digit IMEI is entered, the 15th checksum digit is automatically calculated. • Customers take on the responsibility of adhering to 3GPP TS 22.016, Section 2: General Requirements, when using this command. This includes ensuring that each IMEI is within the allocated range and is unique to the ME in which it resides, as well as ensuring that detailed records of produced and delivered MEs are kept.

Examples	// Default IMEI
	at+wimei?
	+WIMEI: 012345478901237
	OK
	
	// Enter 15-digit IMEI
	at+wimei=354610060035829
	OK
	
	at+wimei?
	+WIMEI: 354610060035829
	OK
	
	// Enter 14-digit IMEI
	at+wimei=35461006003582
	OK
	
	at+wimei?
	+WIMEI: 354610060035829
	OK

3.17. +KALTCFG Command: Set and Get Custom Configuration

HL7718, HL7748 and HL7749	
Test command Syntax **AT+KALTCFG=?**	 Response **+KALTCFG:** (list of supported **<mode>**s),(list of supported **<param>**s) **OK**
Write command Syntax **AT+KALTCFG=<mode>,<param>[,<value>]**	 Response **OK** or **+CME ERROR: <err>** Parameters **<mode>** 0 Set configuration 1 Get configuration **<param>** “RRC_INACTIVITY_TIMER” Inactivity timer for RRC state mismatch recovery **<value>** 0 – 60 Timer in seconds
Reference Sierra Wireless Proprietary	Notes • Parameter <value> is not relevant when <mode>=1. • “RRC_INACTIVITY_TIMER” value is persistent after reset.

Examples	// Set parameter RRC_INACTIVITY_TIMER to default value (0 second)
	AT+KALTCFG=0,"RRC_INACTIVITY_TIMER"
	OK
	
	// Set parameter RRC_INACTIVITY_TIMER to 15 seconds
	AT+KALTCFG=0,"RRC_INACTIVITY_TIMER",15
	OK
	
	// Get value of RRC_INACTIVITY_TIMER
	AT+KALTCFG=1,"RRC_INACTIVITY_TIMER"
	+KALTCFG: 15
	OK

4. Call Control Commands

4.1. H Command: Disconnect Existing Connection

HL7718, HL7748 and HL7749	
Execute command Syntax **ATH[<type>]**	Response **OK** Disconnection successful, or there was no call to disconnect **ERROR** <type> is out of range Parameter **<type>** Type of call affected by ATH request. 0 Same behavior as without a parameter; disconnects ALL calls on the channel that the command is requested from.
Unsolicited Notification	**NO CARRIER** Occurs when the PPP link between the device and the host is terminated
Reference	V.25Ter

Examples	// HL7749 without an open call
	ATH
	OK
	
	// HL7749 with an open call
	ATD*99*1#**
	CONNECT
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	OK // Switch to AT mode with +++
	
	ATH
	OK
	NO CARRIER

4.2. D Command: Mobile Originated Call to Dial a Number

HL7718, HL7748 and HL7749	
Execute command Syntax **ATD[<n>]**	Response **ERROR** The connection cannot be established because <n> is not supported **CONNECT** Data connection successfully connected Parameter **<n>** String of dialing digits and optionally V.25ter modifiers (dialing digits): 0-9, * , #, +, A

HL7718, HL7748 and HL7749	
Unsolicited Notification	**NO CARRIER** If the PPP link between the device and the host is terminated or if the network detaches the module.
Reference V25Ter	Notes • Only data calls with **ATD*99[<n>]** is supported. • "T" dial modifier is ignored. **ATDT<n>** gets the same behavior as **ATD<n>**.

4.3. %CEER Command: Protocol Error Notification

HL7718, HL7748 and HL7749	
Test command Syntax **AT%CEER=?**	Response **%CEER: (**list of supported **<mode>**s**)** **OK**
Read command Syntax **AT%CEER?**	Response **%CEER: <mode> [,<module>, <procedure>, <failure> [,<reject cause>, [<error info>]]]** **OK** or **+CME ERROR: <err>**
Execute command Syntax **AT%CEER= [<mode>]**	Response **OK** or **ERROR** Parameter **<mode>** Status of unsolicited result response presentation 0 Disabled 1 Enabled **<clear_err>** Clear last stored failure report 0 Keep last stored failure report 1 Clear last stored failure report **<module>** Protocol layer or protocol entity "NAS-EMM" "NAS-ESM" "PDM" "RRC" "PDCP" "RLC" "MAC" "L1A"

HL7718, HL7748 and HL7749	
	<procedure> Protocol defined procedure For NAS-EMM: “ATTACH” “DETACH” “TAU” “SERREQ” – service request “AUTH” For NAS-ESM: “PDN_CONN” “PDP_ACT” “PDP_DEACT” For PDM: “IPV6_RA” For RRC: “CONN_EST” For PDCP: <TBD> For RLC: <TBD> For MAC: <TBD> For L1A: <TBD> **<failure>** “REJECT” “MAXRETRY” “BARRING” “UNEXPECTED” **<reject cause>** Reject cause as per protocol definition For NAS-EMM and NAS-ESM: #X – numeric value of reject code prefixed with “#” For RRC: 1 Access class barring 99 Other **<error info>** Arbitrary error information text
Notes	The execute command enables or disables the presentation of a URC about system failures as: **`%CEER: <module>,<procedure>,<failure>[,<reject cause>[,<error info>]]`**.
Examples	**AT%CEER?** **%CEER: 0,“NAS-EMM”,“ATTACH”,“REJECT”,#3,INVALID SIM** **OK** // For unsolicited report **%CEER: “NAS-EMM”,“ATTACH”,“MAXRETRY”**

5. ME Control and Status Commands

5.1. +CCLK Command: Real Time Clock

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CCLK=?**	 Response **OK**
Read command Syntax **AT+CCLK?**	 Response **+CCLK: <time>** **OK** or **+CME ERROR: <err>**
Write command Syntax **AT+CCLK=<time>**	 Response **OK** or **+CME ERROR: <err>** Parameter **<time>** String type value with format "yy/MM/dd,hh:mm:ss±zz", where characters indicate year (last two digits), month, day, hour, minutes, seconds and time zone (indicates the difference, expressed in quarters of an hour, between the local time and GMT; range = -96 to +96). E.g. 6th of May 1994, 22:10:00 GMT+2 hours equals to "94/05/06,22:10:00+08"
Reference	27.007 Rev12

5.2. +CLAC Command: List Available AT Commands

HL7718, HL7748 and HL7749	
Execute command Syntax **AT+CLAC**	 Response List of all supported AT Commands **<AT Command1><CR> <LF>** **[<AT Command2><CR> <LF> […]]** **OK**
Reference 27.007	Notes This command provides the AT command list available for the user.

5.3. +CFUN Command: Set Phone Functionality

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CFUN=?**	 Response **+CFUN:** (list of supported **<fun>**s), (list of supported **<rst>**s) **OK** or **+CME ERROR: <err>**
Read command Syntax **AT+CFUN?**	 Response **+CFUN: <fun>** **OK** or **+CME ERROR: <err>**
Write command Syntax **AT+CFUN=[<fun>[,<rst>]]**	 Response **OK** or **+CME ERROR: <err>** Parameters **<fun>** 0 Minimum functionality 1 Full functionality 4 Disable phone both transmit and receive RF circuits 5 – 127 Not supported **<rst>** 0 Do not reset the MT before setting it to <fun> power level 1 Reset the MT before setting it to <fun> power level
Reference 27.007 Rev11	Notes • Only <fun> = 4 (flight mode) is stored in non-volatile memory. • If <fun>=0 and the SIM is waiting for the PIN to be entered, **AT+CFUN=1** will return **ERROR**.
Examples	**AT+CPIN?** **+CPIN: SIM PIN** // SIM is waiting for PIN **OK** **AT+CFUN?** **+CFUN: 0** **OK** **AT+CFUN=1** **ERROR** // SIM is still waiting for PIN **AT+CPIN="0000"** // SIM PIN is entered **OK** **AT+CFUN=1** **OK**

5.4. +CMEE Command: Report Mobile Termination Error

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CMEE=?**	 Response **+CMEE:** (list of supported **<n>**s) **OK**
Read command Syntax **AT+CMEE?**	 Response **+CMEE: <n>** **OK**
Write command Syntax **AT+CMEE=[<n>]**	 Response **OK** Parameter **<n>** 0 Disable **+CME ERROR: <err>** result code and use **ERROR** instead 1 **+CME ERROR: <err>** result code and use numeric <err> values 2 **+CME ERROR: <err>** result code and use verbose <err> values
Reference	27.007 Rev12

5.5. +CPIN Command: Enter PIN

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CPIN=?**	 Response **OK**
Read command Syntax **AT+CPIN?**	 Response **+CPIN: <code>** **OK** or **+CME ERROR: <err>**
Write command Syntax **AT+CPIN=<pin>[,<newpin>]**	 Response **OK** or **+CME ERROR: <err>**

HL7718, HL7748 and HL7749	
	Parameters **<code>** READY — MT is not pending for any password SIM PIN — MT is waiting for SIM PIN to be given SIM PUK — MT is waiting for SIM PUK to be given SIM PIN2 — MT is waiting for SIM PIN2 to be given (this <code> is recommended to be returned only when the last executed command resulted in PIN2 authentication failure (i.e. **+CME ERROR: 17**); if PIN2 is not entered right after the failure, it is recommended that MT does not block its operation) SIM PUK2 — MT is waiting for SIM PUK2 to be given (this <code> is recommended to be returned only when the last executed command resulted in PUK2 authentication failure (i.e. **+CME ERROR: 18**); if PUK2 and new PIN2 are not entered right after the failure, it is recommended that ME does not block its operation). PH-SIM PIN — MT is waiting for the phone-to-SIM card password to be given PH-NET PIN — MT is waiting for the network personalization password to be given **<pin>, <newpin>** String type values
Reference 27.007 Rev12	Notes SIM PIN should be entered to execute **AT+CFUN=1** successfully.

5.6. +CSQ Command: Signal Quality

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CSQ=?**	 Response **+CSQ: (**list of supported **<rssi>**s**),(**list of supported **<ber>**s**)** **OK**
Execute command Syntax **AT+CSQ**	 Response **+CSQ: <rssi>,<ber>** **OK** or **+CME ERROR: <err>** Parameters **<rssi>** 0 — -113 dBm or less 1 — -111 dBm 2 – 30 — -109 to -53 dBm 31 — -51 dBm or greater 99 — Not known or not detectable **<ber>** 0 to 7 — As RXQUAL values in the table in 3GPP TS 45.008 [20] subclause 8.2.4 99 — Not known or not detectable
Reference	27.007 Rev12

5.7. +KSREP Command: Mobile Start-Up Reporting

HL7718, HL7748 and HL7749	
Test command Syntax **AT+KSREP=?**	 Response **+KSREP:** (list of supported **<act>**s) **OK**
Read command Syntax **AT+KSREP?**	 Response **+KSREP: <act>,<stat>** **OK**
Write command Syntax **AT+KSREP= <act>**	 Response **OK** Parameters **<act>** Indicates if the module must send a unsolicited code during startup 0 The module will not send an unsolicited code 1 The module will send an unsolicited code **<stat>** Indicates the status of the module 0 The module is ready to receive commands for the TE. No access code is required 1 The module is waiting for an access code (the **AT+CPIN?** command can be used to determine the access code) 2 The SIM card is not present 3 The module is in “SIMlock” state 4 Unrecoverable error 5 Unknown state 6 Inactive SIM
Unsolicited Notification	**+KSUP: <stat>**
Reference Sierra Wireless Proprietary	Notes • Configuration is kept in non-volatile memory after reset. • The unsolicited notification is sent once after the boot process. • The unsolicited notification is sent once after waking up from HIBERNATE and ALARM states.

5.8. +CSIM Command: Generic SIM Access

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CSIM =?**	 Response **OK**

HL7718, HL7748 and HL7749	
Write command Syntax **AT+CSIM= <length>, <command>**	Response **+CSIM: <length>,<response>** **OK** or **+CME ERROR: <err>** Parameters **<length>** Integer type that indicates the length of the characters that are sent to TE in <command> or <response> **<command>** Command passed on by MT to the SIM in hexadecimal format **<response>** Response to the command passed on by the SIM to the MT in hexadecimal format
Reference 27.007 Rev12	Notes Compared to Restricted SIM Access command **+CRSM**, the definition of **+CSIM** allows the TE to take more control over the SIM-ME interface. The locking and unlocking of the interface may be done by a special <command> value or automatically by TA/ME (by interpreting the <command> parameter). In case the TE application does not use the unlock command (or does not send a <command> causing automatic unlock) in a certain timeout value, ME may release the locking.

5.9. +CRSM Command: Restricted SIM Access

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CRSM=?**	Response **OK**
Write command Syntax **AT+CRSM= <command> [,<fileid>[,<P1>, <P2>,<P3> [,<data> [,<pathid>]]]]**	Response **+CRSM: <sw1>,<sw2>[,<response>]** **OK** or **+CME ERROR: <err>** Parameters **<command>** 176 READ BINARY 178 READ RECORD 192 GET RESPONSE 214 UPDATE BINARY 220 UPDATE RECORD 242 STATUS 203 RETRIEVE DATA 219 SET DATA

HL7718, HL7748 and HL7749	
	<fileid> Integer type; this is the identifier of an elementary data file on the SIM. Mandatory for every command except STATUS. **<P1>, <P2>, <P3>** Integer type defining the request. These parameters are mandatory for every command, except GET RESPONE and STATUS. The values are described in 3GPP TS 51.011 [28] **<data>** Information to be written to the SIM **<pathid>** String type that contains the path of an elementary file on the SIM/USIM in hexadecimal format as defined in ETSI TS 102 221 (e.g. "7F205F70" in SIM and USIM case). This parameter will only be used in the mode "select by path from MF" as defined in ETSI TS 102 221 [60]. **<sw1>, <sw2>** Integer type containing from information the SIM about the execution of the actual command. These parameters are delivered to the TE in either successful or failed executions of the command. **<response>** Response of successful completion of the command previously issued. STATUS and GET RESPONSE returns data, which gives information about the current elementary data field. This information includes the type of file and its size (refer to 3GPP TS 51.011 [28]). After READ BINARY, READ RECORD or RETRIEVE DATA commands, the requested data will be returned. <response> is not returned after a successful UPDATE BINARY, UPDATE RECORD or SET DATA command.
Reference 27.007 Rev12	Notes By using this command instead of the generic SIM access command, **+CSIM**, the DTE application has an easier but more limited access to the SIM database.

5.10. +CESQ Command: Extended Signal Quality

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CESQ=?**	 Response **+CESQ: (**list of supported **<rxlev>**s**),(**list of supported **<ber>**s**),(**list of supported **<rscp>**s**),(**list of supported **<ecno>**s**),(**list of supported **<rsrq>**s**),(**list of supported **<rsrp>**s**)** **OK**
Execute command Syntax **AT+CESQ**	 Response **+CESQ: <rxlev>,<ber>,<rscp>,<ecno>,<rsrq>,<rsrp>** **OK** or **+CME ERROR: <err>** Parameters **<rxlev>** Received signal strength level (see 3GPP TS 45.008 [20] subclause 8.1.4) 99 Not known or not detectable **<ber>** Channel bit error rate (in percent) 99 Not known or not detectable

HL7718, HL7748 and HL7749	
	<rscp> Received signal code power (see 3GPP TS 25.133 [95] subclause 9.1.1.3 and 3GPP TS 25.123 [96] subclause 9.1.1.1.3) 255 Not known or not detectable **<ecno>** Ratio of the received energy per PN chip to the total received power spectral density (see 3GPP TS 25.133 [95] subclause) 255 Not known or not detectable **<rsrq>** Reference signal received quality (see 3GPP TS 36.133 [96] subclause 9.1.7) 0 rsrq < -19.5 dB 1 -19.5 dB ≤ rsrq < -19 dB 2 -19 dB ≤ rsrq < -18.5 dB : : : : 32 -4 dB ≤ rsrq < -3.5 dB 33 -3.5 dB ≤ rsrq < -3 dB 34 -3 dB ≤ rsrq 255 Not known or not detectable **<rsrp>** Reference signal received power (see 3GPP TS 36.133 [96] subclause 9.1.4). 0 rsrp < -140 dBm 1 -140 dBm ≤ rsrp < -139 dBm 2 -139 dBm ≤ rsrp < -138 dBm : : : : 95 -46 dBm ≤ rsrp < -45 dBm 96 -45 dBm ≤ rsrp < -44 dBm 97 -44 dBm ≤ rsrp 255 Not known or not detectable
Reference	27.007 Rev12

5.11. +CPOF Command: Power Off

HL7718, HL7748 and HL7749	
Execute command Syntax **AT+CPOF**	 Response **OK**
Notes	• This command powers the module off. • OK is immediately returned before the power off sequence. • The only way to wake the module up is to set the WAKEUP pin high.

5.12. +CPWROFF Command: Power Off

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CPWROFF=?**	 Response **OK**
Execute command Syntax **AT+CPWROFF [=<mode>]**	 Response **OK** or **ERROR** Parameter **<mode>** Power down mode 1 Fast power down mode
Notes	• Not specifying a parameter value for the execute command will perform normal IMSI detach before powering down. • <mode>=1 will perform fast power down without an IMSI detach request being sent to the network. • The only way to wake the module up is to set the WAKEUP pin high.

5.13. +KSLEEP Command: Power Management Control

HL7718, HL7748 and HL7749	
Test command Syntax **AT+KSLEEP=?**	 Response **+KSLEEP:** (list of supported **<mngt>**s),(list of supported **<level>**s) **OK**
Read command Syntax **AT+KSLEEP?**	 Response **+KSLEEP: <mngt>,<level>** **OK**
Write command Syntax **AT+KSLEEP= <mngt> [,<level>]**	 Response **OK** Parameters **<mngt>** Defines how the module enters and leaves power saving mode 0 Sleep mode permission is driven by a hardware signal (DTR or WAKEUP pin regarding <level>) – if the signal is active (low level for DTR, high level for WAKEUP pin), the module does not enter sleep mode. 1 Standalone sleep mode – the module decides by itself when it enters sleep mode. 2 Sleep mode always disabled.

HL7718, HL7748 and HL7749	
	<level> Defines the lowest power saving mode that the module can enter 0 SLEEP – the module wakes up by a low level on the DTR signal or a high level on the WAKEUP pin; or by reception of a character on UART1 RX (the character is then lost) 1 HIBERNATE – the module wakes up by a high level on the WAKEUP pin 2 ALARM – this is the deepest sleep state; the module wakes up by a high level on the WAKEUP pin This parameter is allowed only when <mngt>=0
Reference Sierra Wireless Proprietary	Notes • Current configuration is kept in non-volatile memory after reset. • When **AT+KSLEEP=1**, the lowest power saving mode available is SLEEP. • When <level>=0, the CTS signal goes inactive when the module enters sleep mode. • If hardware flow control is used (**AT&K3**) and **AT+KSLEEP=1**, it is not possible to wake the module up by sending a character on UART1 RX because the CTS signal is inactive and so the character is blocked by flow control. In this case, the only way to wake the module up is to toggle the DTR signal or WAKEUP pin. • This command is not supported on DV1 and DV2 hardware (answers **ERROR**).

5.14. +WESHDOWN Command: Emergency Shutdown

HL7718, HL7748 and HL7749	
Test command Syntax **AT+WESHDOWN =?**	 Response **+WESHDOWN: (0-2),(**list of supported **<gpio_index>**s**)** **OK**
Read command Syntax **AT+ WESHDOWN?**	 Response **+WESHDOWN: <mode>,<gpio_index>** **OK**
Write command Syntax **AT+WESHDOWN =<mode>[,<gpio_ index>]**	 Response **OK** or **ERROR** Parameters **<mode>** 0 Disable emergency shutdown feature by GPIO 1 Enable emergency shutdown feature by GPIO 2 Trigger emergency shutdown **<gpio_index>** 1 – 8, 10, 11, 15 Defines which GPIO will be used as input to trigger the emergency shutdown on the falling edge. Default value = 4

HL7718, HL7748 and HL7749	
Reference Sierra Wireless Proprietary	Notes • When <mode>=0 or <mode>=2, no other parameters are needed. • Configuration is saved in non-volatile memory and is therefore still effective after a power cycle. • It might occasionally happen that the OK response to **AT+WESHDOWN=2** is not received on the serial link by the application due to the quick shutdown.
Examples	**AT+WESHDOWN=?** **+WESHDOWN: (0-2),(1-8,10,11,15)** **OK** **AT+WESHDOWN?** **+WESHDOWN: 0,4** *// Emergency Shutdown by GPIO not active* **OK** **AT+WESHDOWN=1,4** *// Activate Emergency shutdown on GPIO4* **OK** **AT+WESHDOWN?** **+WESHDOWN: 1,4** *// A falling on GPIO4 will shut down the module* **OK** **AT+WESHDOWN=2** **OK** *// Module shuts down*

5.15. +CPAS Command: Phone Activity Status

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CPAS=?**	Response **+CPAS: (**list of supported **<pas>**es**)** **OK** or **+CME ERROR: <err>**
Execute command Syntax **AT+CPAS**	Response **+CPAS: <pas>** **OK** or **+CME ERROR: <err>** Parameter **<pas>** 0 Ready (MT allows commands from TA/TE) 1 Unavailable (MT does not allow commands from TA/TE) 2 Unknown (MT is not guaranteed to respond to instructions)

HL7718, HL7748 and HL7749	
	3 Ringing (MT is ready for commands from TA/TE, but the ringer is active) 4 Call in progress (MT is ready for commands from TA/TE, but a call is in progress) 5 Asleep (MT is unable to process commands from TA/TE because it is in a low functionality state)
Reference 27.007 Rev12	Notes This command reflects the data connection status.

5.16. +CCHO Command: Open Logical Channel

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CCHO=?**	 Response **OK**
Write command Syntax **AT+CCHO= <dfname>**	 Response **<sessionid>** **OK** or **+CME ERROR: <err>** Parameters **<dfname>** All selectable applications in the UICC are referenced by a DF name coded on 1 – 16 bytes **<sessionid>** Session ID to target a specific application on the USIM using logical channels mechanisms.
Reference	27.007 Rev12

5.17. +CCHC Command: Close Logical Channel

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CCHC=?**	 Response **OK**
Write command Syntax **AT+CCHC= <sessionid>**	 Response **+CCHC** **OK** or **+CME ERROR: <err>**

HL7718, HL7748 and HL7749	
	Parameters **<sessionid>** Session ID to target a specific application on the USIM using logical channels mechanisms.
Reference	27.007 Rev12

5.18. +CTZU Command: Automatic Time Zone Update

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CTZU=?**	 Response **+CTZU: (**list of supported **<onoff>**s**)** **OK** or **+CME ERROR: <err>**
Read command Syntax **AT+CTZU?**	 Response **+CTZU: <onoff>** **OK** or **+CME ERROR: <err>**
Execute command Syntax **AT+CTZU=** **[<onoff>]**	 Response **OK** or **+CME ERROR: <err>** Parameter **<onoff>** 0 Disable automatic time zone update via NITZ 1 Enable automatic time zone update via NITZ
Reference	27.007 Rev12

5.19. +CTZR Command: Time Zone Reporting

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CTZR=?**	 Response **+CTZR: (**list of supported **<reporting>**s**)** **OK** or **+CME ERROR: <err>**
Read command Syntax **AT+CTZR?**	 Response **+CTZR: <reporting>** **OK** or **+CME ERROR: <err>**
Execute command Syntax **AT+CTZR=** **[<reporting>]**	 Response **OK** or **+CME ERROR: <err>** Parameters **<reporting>** 0 Disable time zone change event reporting 1 Enable time zone change event reporting with URC **+CTZV: <tz>** 2 Enable time zone change event reporting with URC **+CTZE: <tz>,<dst>,[<time>]** **<tz>** Sum of the local time zone (difference between the local time and GMT expressed in quarters of an hour) plus daylight saving time. The format is "±zz", expressed as a fixed width, 2-digit integer with range -48 to +56. To maintain a fixed width, numbers in the range -9 to +9 are expressed with a leading zero, e.g. "-09", "+00" and "+09". **<dst>** 0 <tz> includes no adjustment for Daylight Saving Time 1 <tz> includes +1 hour (equals 4 quarters in <tz>) adjustment for Daylight Saving Time 2 <tz> includes +2 hours (equals 8 quarters in <tz>) adjustment for Daylight Saving Time **<time>** Local time in format "YYYY/MM/DD,hh:mm:ss", expressed as integers representing year (YYYY), month (MM), date (DD), hour (hh), minute (mm) and second (ss). Local time can be derived by the MT from information provided by the network at the time of delivering time zone information and will be present in the unsolicited result code for extended time zone and local time reporting if the universal time is provided by the network.
Reference	27.007 Rev12

5.20. + WEXTCLK Command: External Clocks Setting

HL7718, HL7748 and HL7749	
Test command Syntax **AT+WEXTCLK=?**	 Response **+WEXTCLK: (**list of supported **<output>**s**),(**list of supported **<status>**es**)** **OK**
Read command Syntax **AT+WEXTCLK?**	 Response **+WEXTCLK: <output>,<status>** **+WEXTCLK: <output>,<status>** **OK**
Write command Syntax **AT+WEXTCLK= <output>, <status>**	 Response **+WEXTCLK: <output>,<status>** **OK** Parameters **<output>** 0 32kHz output (32K_CLKOUT) 1 26MHz output (26M_CLKOUT) **<status>** 0 Disabled 1 Enabled
Notes	• This command allows generating 26 MHz on the output clock pin of the module. • The 32 KHz clock is always provided; status = 0 (disabled) is not allowed for this output. • The parameters are not saved in non-volatile memory. • This command is available when the module has finished its initialization. • This command works without a SIM card.

6. Network Service Related Commands

6.1. +CLCK Command: Facility Lock

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CLCK=?**	 Response **+CLCK:** (list of supported **<fac>**s) **OK** or **+CME ERROR: <err>**
Write command Syntax **AT+CLCK=<fac>, <mode> [,<passwd> [,<class>]]**	 Response If **<mode>** = 2 and command is successful: **+CLCK: <status>[,<class1>** **[<CR><LF>+CLCK: <status>,<class2>** **[...]]** **OK** If **<mode>** <> 2 and command is successful: **OK** or **+CME ERROR: <err>** Parameters **<fac>** "SC" SIM (lock SIM/UICC card installed in the currently selected card slot). The SIM/UICC asks the password at MT power-up and when this lock command issued. "P2" SIM PIN2 password specified for the facility from the user interface or with a command. "PN" Network Personalization (refer to 3GPP TS 22.022 [33]) "PS" PH-SIM (lock phone to SIM/UICC card installed in the currently selected card slot). The MT asks for the password when other than the current SIM/UICC card is inserted; MT may remember certain previously used cards, thus not requiring the password when they are inserted). "PU" Network subset personalization "PP" Service provider personalization "PC" Corporate personalization **<mode>** 0 Unlock 1 Lock 2 Query status **<status>** 0 Not active 1 Active

HL7718, HL7748 and HL7749	
	<passwd> Same as the password specified for the facility from the ME user interface or with command **+CPWD** **<class>** Sum of integers each representing a class of information (default value is 7 – voice, data and fax) 1 Voice (telephony) 2 Data (refers to all bearer services; with <mode>=2 this may only refer to some bearer service if the TA does not support values 16, 32, 64 and 128) 4 Fax (facsimile services) 8 Short message service 16 Data circuit sync 32 Data circuit async 64 Dedicated packet access 128 Dedicated PAD access
Reference	27.007 Rev12

6.2. +COPN Command: Read Operator Name

HL7718, HL7748 and HL7749	
Test command Syntax **AT+COPN=?**	 Response **OK**
Execute command Syntax **AT+COPN**	 Response **+COPN: <numeric1>,<alpha1>** **[<CR><LF>+COPN: <numeric2>,<alpha2>** **[...]]** **OK** Parameters **<numeric>** Operator in numeric format **<alpha>** Operator in long alphanumeric format
Reference	27.007 Rev12

6.3. +COPS Command: Operator Selection

HL7718, HL7748 and HL7749	
Test command Syntax **AT+COPS=?**	 Response **+COPS: [**list of supported **(<stat>,**long alphanumeric **<oper>,**short alphanumeric **<oper>,** numeric **<oper>[,< AcT>][,,(**list of supported **<mode>**s**),(**list of supported **<format>**s**)]** **OK**

HL7718, HL7748 and HL7749	
	or **+CME ERROR: <err>**
Read command Syntax **AT+COPS?**	Response **+COPS: <mode>[,<format>,<oper>[,< AcT>]]** **OK** or **+CME ERROR: <err>**
Write command Syntax **AT+COPS=** **[<mode>** **[,<format>** **[,<oper>** **[,<AcT>]]]]**	Response **OK** or **+CME ERROR: <err>** Parameters **<mode>** 0 Automatic (<oper> is ignored) 1 Manual (<oper> is present, and <AcT> is optional) 2 Deregister from network 3 Only set <format>. Do not attempt registration/deregistration (<oper> and <AcT> are ignored). **<format>** 0 Long alphanumeric <oper> 1 Short alphanumeric <oper> 2 Numeric <oper> **<oper>** String type given in format <format>. This field may be up to 16-character long for long alphanumeric format, up to 8 characters for short alphanumeric format. The numeric format is the GSM Location Area Identification number. **<stat>** 0 Unknown 1 Network available 2 Current (registered) 3 Forbidden network **<AcT>** 7 E-UTRAN
Reference 27.007 Rev12	Notes **AT+COPS=?** is only available when the device is not in RRC Connected state (when it still has data to transmit or receive). **AT+COPS=?** will return ERROR if the device is in RRC Connected state. To ensure that the device is not in RRC Connected state, the device can be explicitly detached from the network using **AT+CGATT=0**, for example.

6.4. +CPOL Command: Preferred PLMN List

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CPOL=?**	Response **+CPOL:** (list of supported **<index>**es),(list of supported **<format>**s) **OK** or **+CME ERROR: <err>**
Read command Syntax **AT+CPOL?**	Response **+CPOL: <index1>,<format>,<oper1>[,<GSM_AcT1>,<GSM_Compact_AcT1>, <UTRAN_AcT1>,<E-UTRAN_AcT1>][<CR><LF>** **+CPOL: <index2>,<format>,<oper2>[,<GSM_AcT2>,<GSM_Compact_AcT2>, <UTRAN_AcT2>,<E-UTRAN_AcT2>]** **[...]]** **OK** or **+CME ERROR: <err>**
Write command Syntax **+CPOL=[<index>] [,<format> [,<oper>[,<GSM_ AcT>,<GSM_ Compact_AcT>, <UTRAN_AcT>, <E-UTRAN_AcT>]]]**	Response **OK** or **+CME ERROR: <err>** Parameters **<index>** Order number of operator in the SIM/USIM preferred operator list **<format>** 2 Numeric <oper> **<oper>** Operator **<GSM_AcT>** GSM access technology 0 Access technology not selected 1 Access technology selected **<GSM_Comp_AcT>** GSM compact access technology 0 Access technology not selected 1 Access technology selected **<UTRAN_AcT>** UTRAN access technology 0 Access technology not selected 1 Access technology selected **<E-UTRAN_AcT>** E-UTRAN access technology 0 Access technology not selected 1 Access technology selected
Reference	27.007 Rev12

6.5. +CPWD Command: Change Password

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CPWD=?**	Response **+CPWD:** list of supported (**<fac>,<pwdlength>**)s **OK** or **+CME ERROR: <err>**
Write command Syntax **AT+CPWD= <fac>,<oldpwd>, <newpwd>**	Response **OK** or **+CME ERROR: <err>** Parameters **<fac>** "SC" SIM (lock SIM/UICC card installed in the currently selected card slot). The SIM/UICC asks the password at MT power-up and when this lock command issued. "P2" SIM PIN2 password specified for the facility from the user interface or with a command. "PN" Network personalization (refer to 3GPP TS 22.022 [33]) "PS" PH-SIM (lock phone to SIM/UICC card installed in the currently selected card slot). The MT asks for the password when other than the current SIM/UICC card is inserted; MT may remember certain previously used cards, thus not requiring the password when they are inserted). "PU" Network subset personalization "PP" Service provider personalization "PC" Corporate personalization **<oldpwd>, <newpwd>** String type; <oldpwd> is the same as the password specified for the facility from the ME user interface or with command **+CPWD** and <newpwd> is the new password; maximum length of the password is determined with <pwdlength> **<pwdlength>** Maximum length of the password for the facility
Reference	27.007 Rev12

6.6. +CREG Command: Network Registration

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CREG=?**	Response **+CREG:** (list of supported **<n>**s) **OK**

HL7718, HL7748 and HL7749

Read command

Syntax
AT+CREG?

Response
+CREG: <n>,<stat>[,[<lac>],[<ci>],[<AcT>][,<cause_type>,<reject_cause>]]
OK

Write command

Syntax
AT+CREG=[<n>]

Response
OK

or
+CME ERROR: <err>

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 **+CREG: <stat>[,<lac>,<ci>[,<Act>]]**
3 Enable network registration, location information and cause value information unsolicited result code **+CREG:<stat>[,[<lac>],[<ci>],[<AcT>][,<cause_type>,<reject_cause>]]**

<stat> Circuit mode registration status
0 Not registered, ME is not currently searching a new operator to register to
1 Registered, home network
2 Not registered, but ME is currently searching a new operator to register to
3 Registration denied
4 Unknown
5 Registered, roaming

<lac> String-type; 2-byte location area code in hexadecimal format (e.g. "00C3")

<ci> String-type; 4-byte cell ID in hexadecimal format

<AcT> 7 E-UTRAN

<cause_type> Type of <reject_cause>
0 <reject_cause> contains an MM cause value (see 3GPP TS 24.008 [8] Annex G)
1 <reject_cause> contains a manufacturer specific cause

<reject_cause> Cause of the failed registration

Reference: 27.007 Rev12

6.7. +CPLS Command: Select Preferred PLMN List

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CPLS=?**	 Response **+CPLS:** (list of supported **<list>**s) **OK** or **+CME ERROR: <err>**
Read command Syntax **AT+CPLS?**	 Response **+CPLS: <list>** **OK** or **+CME ERROR: <err>**
Write command Syntax **AT+CPLS=** **[<list>]**	 Response **OK** or **+CME ERROR: <err>** Parameter **<list>** 0 User controlled PLMN selector with Access Technology $EF_{PLMNwAcT}$. If not found in the SIM/UICC, then the PLMN preferred list is $EF_{PLMNsel}$ (this file is only available in SIM card or GSM application selected in UICC) 1 Operator controlled PLMN selector with Access Technology $EF_{OPLMNwAcT}$ 2 HPLMN selector with Access Technology $EF_{HPLMNwAcT}$
Reference	27.007 Rev12

6.8. +CEREG Command: EPS Network Registration Status

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CEREG=?**	 Response **+CEREG:** (list of supported **<n>**s) **OK**

HL7718, HL7748 and HL7749

Read command

Syntax
AT+CEREG?

Response
when <n>=0, 1, 2 or 3 and command is successful:
+CEREG: <n>,<stat>[,[<tac>],[<ci>],[<AcT>[,<cause_type>,<reject_cause>]]]
OK

when <n>=4 or 5 and command is successful:
+CEREG: <n>,<stat>[,[<lac>],[<ci>],[<AcT>],[<rac>][,[<cause_type>],[<reject_cause>][,[<Active-Time>],[<Periodic-TAU>]]]]
OK

Write command

Syntax
AT+CEREG=[<n>]

Response
OK

or
+CME ERROR: <err>

Parameters

<n>
- 0 Disable network registration unsolicited result code
- 1 Enable network registration unsolicited result code **+CEREG: <stat>**
- 2 Enable network registration and location information unsolicited result code **+CEREG: <stat>[,[<tac>],[<ci>],[<AcT>]]**
- 3 Enable network registration, location information and EMM cause value information unsolicited result code **+CEREG: <stat>[,[<tac>],[<ci>],[<AcT>][,<cause_type>,<reject_cause>]]**
- 4 For a UE that wants to apply PSM, enable network registration and location information unsolicited result code **+CEREG: <stat>[,[<tac>],[<ci>],[<AcT>][,,[,[<Active-Time>],[<Periodic-TAU>]]]]**
- 5 For a UE that wants to apply PSM, enable network registration, location information and EMM cause value information unsolicited result code **+CEREG: <stat>[,[<tac>],[<ci>],[<AcT>][,[<cause_type>],[<reject_cause>][,[<Active-Time>],[<Periodic-TAU>]]]]**

<stat> Indicates the EPS registration status
- 0 Not registered; MT is currently not searching for an operator to register to
- 1 Registered, home network
- 2 Not registered but MT is currently trying to attach or searching for an operator to register to
- 3 Registration denied
- 4 Unknown (e.g. out of E-UTRAN coverage)
- 5 Registered, roaming
- 6 Registered for "SMS only", home network (not applicable)
- 7 Registered for "SMS only", roaming (not applicable)
- 8 Attached for emergency bearer services only
- 9 Registered for "CSFB not preferred", home network (not applicable)
- 10 Registered for "CSFB not preferred", roaming (not applicable)

<tac> 2-byte tracking area code in hexadecimal format (e.g. "00C3" equals 195 in decimal)

<ci> String-type; 4-byte E-UTRAN cell ID in hexadecimal format

HL7718, HL7748 and HL7749	
	<AcT> Access technology of the serving cell 0 GSM (not applicable) 1 GSM Compact (not applicable) 2 UTRAN (not applicable) 3 GSM with EGPRS (not applicable) 4 UTRAN with HSDPA (not applicable) 5 UTRAN with HSUPA (not applicable) 6 UTRAN with HSDPA and HSUPA (not applicable) 7 E-UTRAN **<cause_type>** Indicates the type of <reject_cause> 0 <reject_cause> contains an EMM cause value (see 3GPP TS 24.301 [83] Annex A) 1 <reject_cause> contains a manufacturer-specific cause **<reject_cause>** Cause of the failed registration **<Active-Time>** 1-byte in an 8-bit format. Indicates the Active Time value (T3324) allocated to the UE in E-UTRAN. The Active Time value is coded as one byte (octet 3) of the GPRS Timer 2 information element coded as bit format (e.g. "00100100" equals 4 minutes). For the coding and the value range, see the GPRS Timer 2 IE in 3GPP TS 24.008 [8] Table 10.5.163/3GPP TS 24.008. Also see 3GPP TS 23.682 [149] and 3GPP TS 23.401 [82]. **<Periodic-TAU>** 1-byte in an 8-bit format. Indicates the extended periodic TAU value (T3412) allocated to the UE in E-UTRAN. The extended periodic TAU value is coded as one byte (octet 3) of the GPRS Timer 3 information element coded as bit format (e.g. "01000111" equals 70 hours). For the coding and the value range, see the GPRS Timer 3 IE in 3GPP TS 24.008 [8] Table 10.5.163a/3GPP TS 24.008. Also see 3GPP TS 23.682 [149] and 3GPP TS 23.401 [82].
Reference	27.007 Rev12

6.9. +CPSMS Command: Power Saving Mode Setting

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CPSMS=?**	Response **+CPSMS: (**list of supported **<mode>**s**),(**list of supported **<Requested_Periodic-RAU>**s**),** **(**list of supported **<Requested_GPRS-READY-timer>**s**),(**list of supported **<Requested_Periodic-TAU>**s**),(**list of supported **<Requested_Active-Time>**s**)** **OK**
Read command Syntax **AT+CPSMS?**	Response **+CPSMS: <mode>,[<Requested_Periodic-RAU>],[<Requested_GPRS-READY-timer>], [<Requested_Periodic-TAU>],[<Requested_Active-Time>]** **OK**

HL7718, HL7748 and HL7749	
Execute command Syntax **AT+CPSMS=[<mode>[,<Requested_Periodic-RAU>[,<Requested_GPRS-READY-timer>[,<Requested_Periodic-TAU>[,<Requested_Active-Time>]]]]]**	Response **OK** or **+CME ERROR: <err>** Parameters **<mode>** 0 Disable the use of PSM 1 Enable the use of PSM **<Requested_Periodic-RAU>** 1-byte in an 8-bit format. Requested extended periodic RAU value to be allocated to the UE. The requested extended periodic RAU value is coded as 1 byte (octet 3) of the GPRS Timer 3 information element coded as bit format (e.g. "01000111" equals 70 hours). For coding and value range, see the GPRS Timer 3 IE in 3GPP TS 24.008 [8] Table 10.5.163a/3GPP TS 24.008. **<Requested_GPRS-READY-timer>** 1-byte in an 8-bit format. Requested GPRS READY timer value to be allocated to the UE. The requested GPRS READY timer value is coded as 1 byte (octet 2) of the GPRS Timer information element coded as bit format (e.g. "01000011" equals 3 decihours or 18 minutes). For coding and value range, see the GPRS Timer IE in 3GPP TS 24.008 [8] Table 10.5.172/3GPP TS 24.008. **<Requested_Periodic-TAU>** 1-byte in an 8-bit format. Requested extended periodic TAU value to be allocated to the UE. The requested extended periodic TAU value is coded as one byte (octet 3) of the GPRS Timer 3 information element coded as bit format (e.g. "01000111" equals 70 hours). For coding and value range, see the GPRS Timer 3 IE in 3GPP TS 24.008 [8] Table 10.5.163a/3GPP TS 24.008. Note that the minimum value allowed for this parameter is 190 minutes on the HL7718. **<Requested_Active-Time>** 1-byte in an 8-bit format. Requested Active Time value to be allocated to the UE. The requested Active Time value is coded as one byte (octet 3) of the GPRS Timer 2 information element coded as bit format (e.g. "00100100" equals 4 minutes). For coding and value range, see the GPRS Timer 2 IE in 3GPP TS 24.008 [8] Table 10.5.163/3GPP TS 24.008.
Reference	27.007 Rev13

6.10. +CNUM Command: Subscriber Number

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CNUM=?**	Response **OK**
Execute command Syntax **AT+CNUM**	Response **CNUM: [<alpha1>],<number1>,<type1>[,<speed>,<service>[,<itc>]]** **[<CR><LF>+CNUM: [<alpha2>],<number2>,<type2>[,<speed>,<service>[,<itc>]]** **[...]]** **OK**

HL7718, HL7748 and HL7749

or
+CME ERROR: <err>

Parameters

<alphax> Optional alphanumeric string associated with <numberx>; used character set should be the one selected with +CSCS

<numberx> String type phone number of format specified by <typex>

<typex> Address octet in integer format (refer to 3GPP TS 24.008 [8] subclause 10.5.4.7)

<speed>

0	Autobauding (automatic selection of the speed; this setting is possible in case of 3.1 kHz modem and non-transparent service)
1	300 bps (V.21)
2	1200 bps (V.22)
3	1200/75 bps (V.23)
4	2400 bps (V.22bis)
5	2400 bps (V.26ter)
6	4800 bps (V.32)
7	9600 bps (V.32)
12	9600 bps (V.34)
14	14400 bps (V.34)
15	19200 bps (V.34)
16	28800 bps (V.34)
17	33600 bps (V.34)
34	1200 bps (V.120)
36	2400 bps (V.120)
38	4800 bps (V.120)
39	9600 bps (V.120)
43	14400 bps (V.120)
47	19200 bps (V.120)
48	28800 bps (V.120)
49	38400 bps (V.120)
50	48000 bps (V.120)
51	56000 bps (V.120)
65	300 bps (V.110)
66	1200 bps (V.110)
68	2400 bps (V.110 or X.31 flag stuffing)
70	4800 bps (V.110 or X.31 flag stuffing)
71	9600 bps (V.110 or X.31 flag stuffing)
75	14400 bps (V.110 or X.31 flag stuffing)
79	19200 bps (V.110 or X.31 flag stuffing)
80	28800 bps (V.110 or X.31 flag stuffing)
81	38400 bps (V.110 or X.31 flag stuffing)
82	48000 bps (V.110 or X.31 flag stuffing)
83	56000 bps (V.110 or X.31 flag stuffing; this setting can be used in conjunction with asynchronous non-transparent UDI or RDI service in order to get FTM)
84	64000 bps (X.31 flag stuffing; this setting can be used in conjunction with asynchronous non-transparent UDI service in order to get FTM)
115	56000 bps (bit transparent)
116	64000 bps (bit transparent)

HL7718, HL7748 and HL7749			
		120	32000 bps (PIAFS32k)
		121	64000 bps (PIAFS64k)
		130	28800 bps (multimedia)
		131	32000 bps (multimedia)
		132	33600 bps (multimedia)
		133	56000 bps (multimedia)
		134	64000 bps (multimedia)
	<service>	0	Asynchronous modem
		1	Synchronous modem
		2	PAD Access (asynchronous)
		3	Packet Access (synchronous)
		4	Voice
		5	Fax
	<itc>	0	3.1 kHz
		1	UDI
Reference	27.007 Rev12		

6.11. %LTEINFO Command: Get LTE Protocol Layer Information

HL7718, HL7748 and HL7749	
Test command Syntax **AT%LTEINFO=?**	 Response **OK**
Read command Syntax **AT%LTEINFO?**	 Response **ERROR**
Write command Syntax **AT%LTEINFO= <layer>,<type>**	 Response **%LTEINFO: <info1>[,<info2>]** **OK** or **+CME ERROR: <err>** Parameters **<layer>** LTE protocol layer “RRC” Radio Resource Control **<type>** Type of information to get “CE” Extended Coverage Mode

HL7718, HL7748 and HL7749	
	<info1> Curent CE mode 0 None – UE is not camped on cell; UE selected the serving cell in normal coverage mode or UE is not supporting CE mode A/B 1 Mode A 2 Mode B **<info2>** Current CE level that was used for accessing the cell during RACH, optional parameter is omitted in RRC IDLE mode, or for UE camped in normal CE mode. 0 EC level 0 1 EC level 1 2 EC level 2 3 EC level 3
Reference Sierra Wireless Proprietary	Notes Only extended coverage mode A is supported.
Example	**AT%LTEINFO="RRC","CE"** **%LTEINFO: 0** **OK**

7. Phonebook Management Commands

7.1. +CPBF Command: Find Phonebook Entries

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CPBF=?**	 Response **+CPBF: [<nlength>],[<tlength>],[<glength>],[<slength>],[<elength>], [<siplength>],[<tellength>]** **OK** or **+CME ERROR: <err>**
Write command Syntax **AT+CPBF= <findtext>**	 Response **[+CPBF: <index1>,<number>,<type>,<text>[,<hidden>][,<group>][,<adnumber>] [,<adtype>][,<secondtext>][,<email>][,<sip_uri>][,<tel_uri>]]** **[<CR><LF>+CBPF: <index2>,<number>,<type>,<text>[,<hidden>][,<group>] [,<adnumber>][,<adtype>][,<secondtext>][,<email>][,<sip_uri>][,<tel_uri>] [...]]** **OK** or **+CME ERROR: <err>** Parameters **<index1>, <index2>, <index>** Integer type values in the range of location numbers of phonebook memory **<number>** String type phone number of format <type> **<type>** Type of address octet in integer format (refer to 3GPP TS 24.008 [8] subclause 10.5.4.7) **<text>, <findtext>** String type field of maximum length <tlength> **<group>** String type field of maximum length <glength> **<adnumber>** String type phone number of format <adtype> **<adtype>** Type of address octet in integer format (refer to 3GPP TS 24.008 [8] subclause 10.5.4.7) **<secondtext>** String type field of maximum length <slength> **<email>** String type field of maximum length <elength>

HL7718, HL7748 and HL7749	
	<sip_uri> String type field of maximum length <siplength> **<tel_uri>** String type phone number of maximum length <tellength> **<nlength>** Integer type value indicating the maximum length of field <number> **<tlength>** Integer type value indicating the maximum length of field <text> **<glength>** Integer type value indicating the maximum length of field <group> **<slength>** Integer type value indicating the maximum length of field <secondtext> **<elength>** Integer type value indicating the maximum length of field <email> **<siplength>** Integer type value indicating the maximum length of field <sip_uri> **<tellength>** Integer type value indicating the maximum length of field <tel_uri> **<hidden>** Indicates if the entry is hidden or not 0 Phonebook entry not hidden 1 Phonebook entry hidden
Reference	27.007 Rev12

7.2. +CPBS Command: Select Phonebook Memory Storage

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CPBS=?**	 Response **+CPBS: (**list of supported **<storage>**s**)** **OK**
Read command Syntax **AT+CPBS?**	 Response **+CPBS: <storage>[,<used>,<total>]** **OK** or **+CME ERROR: <err>**
Write command Syntax **AT+CPBS=** **<storage>** **[,<password>]**	 Response **OK** or **+CME ERROR: <err>**

HL7718, HL7748 and HL7749	
	Parameters **<storage>** "SM" SIM/UICC phonebook. In the currently selected card slot, if a SIM card is present or if a UICC with an active GSM application is present, the EF_{ADN} under $DF_{Telecom}$ is selected. If a UICC with an active USIM application is present, the global phonebook, $DF_{PHONEBOOK}$ under $DF_{Telecom}$ is selected. **<password>** String type value representing the PIN2-code required when selecting PIN2-code locked <storage>s above. If the combined phonebook is selected, "MT", the <password> will correspond to the hidden key of the USIM phonebook. **<used>** Number of used locations in the selected memory **<total>** Total number of locations in the selected memory
Reference	27.007 Rev12

7.3. +CPBW Command: Write Phonebook Entries

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CPBW=?**	Response **+CPBW: (**list of supported **<index>**s**),[<nlength>],(**list of supported **<type>**s**),[<tlength>],[<glength>],[<slength>],[<elength>],[<siplength>],[<tellength>]** **OK** or **+CME ERROR: <err>**
Read command Syntax **AT+CPBW?**	Response **+CPBW: <written_index>** **OK**
Write command Syntax **AT+CPBW=** **[<index>]** **[,<number>** **[,<type>[,<text>** **[,<group>** **[,<adnumber>** **[,<adtype>** **[,<secondtext>** **[,<email>** **[,<hidden>]]]]]]]]**	Response **+CPBW: <written_index>** **OK** or **+CME ERROR: <err>** Parameters **<index>** Integer type values in the range of location numbers of phonebook memory **<number>** String type phone number of format <type> **<type>** Type of address octet in integer format (refer to 3GPP TS 24.008 [8] subclause 10.5.4.7); default value is 145 when dialing string includes international access code character "+", otherwise the default value is 129.

HL7718, HL7748 and HL7749	
	<text> String type field of maximum length <tlength> **<group>** String type field of maximum length <glength> **<adnumber>** String type phone number of format <adtype> **<adtype>** Type of address octet in integer format (refer to 3GPP TS 24.008 [8] subclause 10.5.4.7) **<secondtext>** String type field of maximum length <slength> **<email>** String type field of maximum length <elength> **<sip_uri>** String type field of maximum length <siplength> **<tel_uri>** String type phone number of maximum length <tellength> **<nlength>** integer type value indicating the maximum length of field <number> **<tlength>** integer type value indicating the maximum length of field <text> **<glength>** Integer type value indicating the maximum length of field <group> **<slength>** Integer type value indicating the maximum length of field <secondtext> **<elength>** Integer type value indicating the maximum length of field <email> **<siplength>** Integer type value indicating the maximum length of field <sip_uri> **<tellength>** Integer type value indicating the maximum length of field <tel_uri> **<hidden>** Indicates if the entry is hidden or not 0 Phonebook entry not hidden 1 Phonebook entry hidden **<written_index>** Last location number <index> of the written phonebook entry
Reference	27.007 Rev12

7.4. +CPBR Command: Read Phonebook Entries

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CPBR=?**	Response **+CPBR: (**list of supported **<index>**es**),[<nlength>],[<tlength>],[<glength>],[<slength>],[<elength>],[<siplength>],[<tellength>]** **OK** or **+CME ERROR: <err>**

HL7718, HL7748 and HL7749

Write command

Syntax
AT+CPBR=<index1>[,<index2>]

Response
[+CPBR: <index1>,<number>,<type>,<text>[,<hidden>][,<group>][,<adnumber>][,<adtype>][,<secondtext>][,<email>][,<sip_uri>][,<tel_uri>]]
[[...]
[<CR><LF>+CPBR: <index2>,<number>,<type>,<text>[,<hidden>][,<group>][,<adnumber>][,<adtype>][,<secondtext>][,<email>][,<sip_uri>][,<tel_uri>]]]
OK

or
+CME ERROR: <err>

Parameters
<index1>, <index2>, <index> integer type values in the range of location numbers of phonebook memory

<number> String type phone number of format <type>

<type> Type of address octet in integer format (refer to 3GPP TS 24.008 [8] subclause 10.5.4.7)

<text> String type field of maximum length <tlength>; character set as specified by command +CSCS

<group> String type field of maximum length <glength>; character set as specified by command +CSCS

<adnumber> String type phone number of format <adtype>

<adtype> Type of address octet in integer format (refer 3GPP TS 24.008 [8] subclause 10.5.4.7)

<secondtext> String type field of maximum length <slength>; character set as specified by command +CSCS

<email> String type field of maximum length <elength>; character set as specified by command +CSCS

<sip_uri> String type field of maximum length <siplength>; character set as specified by command +CSCS

<tel_uri> String type phone number of maximum length <tellength>; character set as specified by command +CSCS

<nlength> Integer type value indicating the maximum length of field <number>

<tlength> Integer type value indicating the maximum length of field <text>

<glength> Integer type value indicating the maximum length of field <group>

<slength> Integer type value indicating the maximum length of field <secondtext>

<elength> Integer type value indicating the maximum length of field <email>

HL7718, HL7748 and HL7749	
	<siplength> Integer type value indicating the maximum length of field <sip_uri> **<tellength>** Integer type value indicating the maximum length of field <tel_uri> **<hidden>** Integer type value that indicates if the entry is hidden or not 0 Phonebook entry not hidden 1 Phonebook entry hidden

8. SMS Commands

8.1. Preliminary Information

The commands supported in both PDU and text modes are only described for PDU mode. For details about text modes, refer to 27.005.

8.2. Parameters Definition

The following parameters are used in the subsequent clauses which describe all commands. The formats of integer and string types referenced here are defined in V.25ter.

The default values are for command parameters, not for result code parameters.

Message Storage Parameters

<index> Integer type; value in the range of location numbers supported by the associated memory

<mem1> String type; memory from which messages are read and; defined values (others are manufacturer specific):

"BM" broadcast message storage

"ME" ME message storage

"MT" any of the storages associated with ME

"SM" (U)SIM message storage; default value

"TA" TA message storage

"SR" status report storage

<mem2> String type; memory to which writing and sending operations are made; refer to <mem1> for defined values. Default value is "SM".

<mem3> String type; preferred memory to which received SMs are to be stored (unless forwarded directly to TE; refer to +CNMI); refer to <mem1> for defined values; received CBMs are always stored in "BM" (or some manufacturer specific storage) unless directly forwarded to TE; received status reports are always stored in "SR" (or some manufacturer specific storage) unless directly forwarded to TE. Default value is "SM".

<stat> Integer type in PDU mode, or string type in text mode; indicates the status of message in memory; defined values:

0	"REC UNREAD"	received unread message (i.e. new message)
1	"REC READ"	received read message
2	"STO UNSENT"	stored unsent message (only applicable to SMs)
3	"STO SENT"	stored sent message (only applicable to SMs)
4	"ALL"	all messages (only applicable to +CMGL command)

<total1> Integer type; total number of message locations in <mem1>

<total2> Integer type; total number of message locations in <mem2>

<total3> Integer type; total number of message locations in <mem3>

<used1> Integer type; number of messages currently in <mem1>

<used2> Integer type; number of messages currently in <mem2>

<used3> Integer type; number of messages currently in <mem3>

Message Data Parameters

<ackpdu> 3G TS 23.040 [3] RP-User-Data element of RP-ACK PDU; format is same as for <pdu> in case of SMS, but without 3G TS 24.011 [6] SC address field and parameter shall be bounded by double quote characters like a normal string type parameter

<alpha> String type alphanumeric representation of <da> or <oa> corresponding to the entry found in MT phonebook; implementation of this feature is manufacturer specific; used character set should be the one selected with command +cscs (see definition of this command in 3G TS 27.007 [9])

<cdata> 3G TS 23.040 [3] TP-Command-Data in text mode responses; ME/TA converts each 8-bit octet into two IRA character long hexadecimal number (e.g. octet with integer value 42 is presented to TE as two characters 2A (IRA 50 and 65))

<ct> 3G TS 23.040 [3] TP-Command-Type in integer format (default 0)

<da> 3G TS 23.040 [3] TP-Destination-Address Address-Value field in string format; BCD numbers (or GSM 7-bit default alphabet characters) are converted to characters of the currently selected TE character set (refer to +cscs in 3G TS 27.007 [9]); type of address given by <toda>

<data> In the case of SMS: 3G TS 23.040 [3] TP-User-Data in text mode responses; format:

- if <dcs> indicates that 3G TS 23.038 [2] GSM 7-bit default alphabet is used and <fo> indicates that 3G TS 23.040 [3] TP-User-Data-Header-Indication is not set:
  - if TE character set other than "HEX" (refer to command +CSCS in 3G TS 27.007 [9]): ME/TA converts GSM alphabet into current TE character set according to rules of Annex A
  - if TE character set is "HEX": ME/TA converts each 7-bit character of GSM 7-bit default alphabet into two IRA-character long hexadecimal number (e.g. character Π (GSM 7-bit default alphabet 23) is presented as 17 (IRA 49 and 55))
- if <dcs> indicates that 8-bit or UCS2 data coding scheme is used, or <fo> indicates that 3G TS 23.040 [3] TP-User-Data-Header-Indication is set: ME/TA converts each 8-bit octet into two IRA-character long hexadecimal number (e.g. octet with integer value 42 is presented to TE as two characters 2A (IRA 50 and 65))

In the case of CBS: 3G TS 23.041 [4] CBM Content of Message in text mode responses; format:

- if <dcs> indicates that 3G TS 23.038 [2] GSM 7-bit default alphabet is used:
  - if TE character set other than "HEX" (refer to +cscs in 3G TS 27.007 [9]): ME/TA converts GSM alphabet into current TE character set according to rules of Annex A
  - if TE character set is "HEX": ME/TA converts each 7-bit character of the GSM 7-bit default alphabet into two IRA character long hexadecimal number
- if <dcs> indicates that 8-bit or UCS2 data coding scheme is used: ME/TA converts each 8-bit octet into two IRA character long hexadecimal number

<dcs> Depending on the command or result code: 3G TS 23.038 [2] SMS Data Coding Scheme (default = 0), or Cell Broadcast Data Coding Scheme in integer format

<dt> 3G TS 23.040 [3] TP-Discharge-Time in time-string format: “yy/MM/dd,hh:mm:ss±zz”, where characters indicate year (two last digits), month, day, hour, minutes, seconds and time zone. E.g. 6th of May 1994, 22:10:00 GMT+2 hours equals to “94/05/06,22:10:00+08”

<fo>	Depending on the command or result code: first octet of 3G TS 23.040 [3] SMS-DELIVER, SMS-SUBMIT (default = 17), SMS-STATUS-REPORT, or SMS-COMMAND (default 2) in integer format
<length>	Integer type value indicating in the text mode (**+CMGF=1**) the length of the message body <data> > (or <cdata>) in characters; or in PDU mode (**+CMGF=0**), the length of the actual TP data unit in octets (i.e. the RP layer SMSC address octets are not counted in the length)
<mid>	3G TS 23.041 [4] CBM Message Identifier in integer format
<mn>	3G TS 23.040 [3] TP-Message-Number in integer format
<mr>	3G TS 23.040 [3] TP-Message-Reference in integer format
<oa>	3G TS 23.040 [3] TP-Originating-Address Address-Value field in string format; BCD numbers (or GSM 7-bit default alphabet characters) are converted to characters of the currently selected TE character set (refer to +cscs in TS 27.07); type of address given by <tooa>
<page>	3G TS 23.041 [4] CBM Page Parameter bits 4-7 in integer format
<pages>	3G TS 23.041 [4] CBM Page Parameter bits 0-3 in integer format
<pdu>	In the case of SMS: 3G TS 24.011 [6] SC address followed by 3G TS 23.040 [3] TPDU in hexadecimal format: ME/TA converts each octet of TP data unit into two IRA-character long hexadecimal number (e.g. octet with integer value 42 is presented to TE as two characters 2A (IRA 50 and 65))
	In the case of CBS: 3G TS 23.041 [4] TPDU in hexadecimal format
<pid>	3G TS 23.040 [3] TP-Protocol-Identifier in integer format (default 0)
<ra>	3G TS 23.040 [3] TP-Recipient-Address Address-Value field in string format; BCD numbers (or GSM 7-bit default alphabet characters) are converted to characters of the currently selected TE character set (refer to +CSCS in 3G TS 27.007 [9]); type of address given by <tora>
<sca>	3G TS 24.011 [6] RP SC address Address-Value field in string format; BCD numbers (or GSM 7-bit default alphabet characters) are converted to characters of the currently selected TE character set (refer to +CSCS in 3G TS 27.007 [9]); type of address given by <tosca>
<scts>	3G TS 23.040 [3] TP-Service-Centre-Time-Stamp in time-string format (refer <dt>)
<sn>	3G TS 23.041 [4] CBM Serial Number in integer format
<st>	3G TS 23.040 [3] TP-Status in integer format
<toda>	3G TS 24.011 [6] TP-Destination-Address Type-of-Address octet in integer format (when first character of <da> is + (IRA 43) default is 145, otherwise default is 129)
<tooa>	3G TS 24.011 [6] TP-Originating-Address Type-of-Address octet in integer format (default refer <toda>)
<tora>	3G TS 24.011 [6] TP-Recipient-Address Type-of-Address octet in integer format (default refer <toda>)
<tosca>	3G TS 24.011 [6] RP SC address Type-of-Address octet in integer format (default refer <toda>)
<vp>	Depending on SMS-SUBMIT <fo> setting: 3G TS 23.040 [3] TP-Validity-Period either in integer format (default 167) or in time-string format (refer <dt>)
<vp>	Depending on SMS-SUBMIT <fo> setting: 3G TS 23.040 [3] TP-Validity-Period either in integer format (default 167), in time-string format (refer <dt>), or if EVPF is supported, in enhanced format (hexadecimal coded string with double quotes)

8.3. +CMGD Command: Delete SMS Message

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CMGD=?**	Response **+CMGD:** (list of supported **<index>**s)[,(list of supported **<delflag>**s)] **OK**
Write command Syntax **AT+CMGD= <index> [,<delflag>]**	Response **OK** Parameter **<delflag>** Integer indicating multiple message deletion requests 0 or omitted Delete the message specified in <index> 1 Delete all read messages from preferred message storage, leaving unread messages and stored mobile originated messages (whether sent or not) untouched 2 Delete all read messages from preferred message storage and sent mobile originated messages, leaving unread messages and unsent mobile originated messages untouched 3 Delete all read messages from preferred message storage, sent and unsent mobile originated messages leaving unread messages untouched 4 Delete all messages from preferred message storage including unread messages
Reference 27.005 Rev12	Notes The write command deletes message from the preferred message storage <mem1> location <index>. If <delflag> is present and not set to 0 then the ME shall ignore <index> and follow the rules for <delflag>.

8.4. +CMGF Command: Select SMS Message Format

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CMGF=?**	Response **+CMGF:** (list of supported **<mode>**s) **OK**
Read command Syntax **AT+CMGF?**	Response **+CMGF: <mode>** **OK**

HL7718, HL7748 and HL7749	
Execute command Syntax **AT+CMGF=[<mode>]**	Response **OK** Parameter **<mode>** 1 Text mode
Reference 27.005 Rev12	Notes The execute command tells the TA which input and output format of messages to use. <mode> indicates the format of messages used with send, list, read and write commands and unsolicited result codes resulting from received messages. Text mode uses the value of parameter <chset> specified by command **+CSCS** to inform the character set to be used in the message body in the TA-TE interface.

8.5. +CMGL Command: List SMS Messages from Preferred Storage

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CMGL=?**	Response **+CMGL:** (list of supported **<stat>**s) **OK**
Execute command Syntax **AT+CMGL[=<stat>]**	Response If command is successful and SMS-SUBMITs and/or SMS-DELIVERs: **+CMGL: <index>,<stat>,<oa/da>,[<alpha>],[<scts>][,<tooa/toda>,<length>]** **<CR><LF><data>[<CR><LF>** **+CMGL: <index>,<stat>,<da/oa>,[<alpha>],[<scts>][,<tooa/toda>,** **<length>]<CR><LF><data>[...]]** If command is successful and SMS-STATUS-REPORTs: **+CMGL: <index>,<stat>,<fo>,<mr>,[<ra>],[<tora>],<scts>,<dt>,<st>** **[<CR><LF>** **+CMGL: <index>,<stat>,<fo>,<mr>,[<ra>],[<tora>],<scts>,<dt>,<st>** **[...]]** If command is successful and SMS-COMMANDs: **+CMGL: <index>,<stat>,<fo>,<ct>[<CR><LF>** **+CMGL: <index>,<stat>,<fo>,<ct>[...]]** If command is successful and CBM storage: **+CMGL: <index>,<stat>,<sn>,<mid>,<page>,<pages>** **<CR><LF><data>[<CR><LF>** **+CMGL: <index>,<stat>,<sn>,<mid>,<page>,<pages>** **<CR><LF><data>[...]]** **OK**

HL7718, HL7748 and HL7749	
	or **+CMS ERROR: <err>** Parameters See section 8.2 Parameters Definition
Reference 27.005 Rev12	Notes • The execute command returns messages with status value <stat> from the preferred message storage <mem1> to the TE. • If the status of the message is “received unread”, status in the storage changes to “received read”.

8.6. +CMGR Command: Read SMS Messages

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CMGR=?**	 Response **OK**
Write command Syntax **AT+CMGR= <index>**	 Response If command is successful and SMS-DELIVER: **+CMGR: <stat>,<oa>,[<alpha>],<scts>[,<tooa>,<fo>,<pid>,<dcs>,<sca>,<tosca>, <length>]<CR><LF><data>** If command is successful and SMS-SUBMIT: **+CMGR: <stat>,<da>,[<alpha>][,<toda>,<fo>,<pid>,<dcs>,[<vp>],<sca>,<tosca>, <length>]<CR><LF><data>** If command is successful and SMS-STATUS-REPORT: **+CMGR: <stat>,<fo>,<mr>,[<ra>],[<tora>],<scts>,<dt>,<st>** If command is successful and SMS-COMMAND: **+CMGR: <stat>,<fo>,<ct>[,<pid>,[<mn>],[<da>],[<toda>],<length>** **<CR><LF><cdata>]** If command is successful and CBM storage: **+CMGR: <stat>,<sn>,<mid>,<dcs>,<page>,<pages><CR><LF><data>** **OK** or **+CMS ERROR: <err>** Parameters See section 8.2 Parameters Definition
Reference 27.005 Rev12	Notes • The execute command returns the message with location value <index> from preferred message storage <mem1> to the TE. • If the status of the message is “received unread”, status in the storage changes to “received read”.

8.7. +CMGS Command: Send SMS Message

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CMGS=?**	 Response **OK**
Write command Syntax If PDU mode (+CMGF=0): **AT+CMGS=<length><CR>PDU is given <ctrl-Z/ESC>** If text mode (+CMGF=1): **AT+CMGS=<da>[,<toda>]<CR>text is entered <ctrl-Z/ESC>**	 Response If PDU mode (+CMGF=0) and sending is successful: **+CMGS: <mr>[,<ackpdu>]** **OK** If text mode (+CMGF=1) and sending is successful: **+CMGS: <mr>[,<scts>]** **OK** or **+CMS ERROR: <err>** Parameters See section 8.2 Parameters Definition
Reference 27.005 Rev12	Notes • <length> must indicate the number of octets coded in the TP layer data unit to be given (i.e. SMSC address octets are excluded). • The TA shall send a 4-character sequence <CR><LF><greater_than><space> (IRA 13, 10, 62, 32) after the command line is terminated with <CR>; after that PDU can be given from TE to ME/TA. • The DCD signal shall be in ACTIVE state while PDU is given; echoing of given characters back from the TA is controlled by V.25ter echo command E. • The PDU shall be in hexadecimal format (similarly as specified for <pdu>) and given in one line; ME/TA converts this coding into the actual octets of PDU when the length octet of the SMSC address (given in the PDU) equals zero, the SMSC address set with command **+CSCA** is used; in this case the SMSC Type-of-Address octet shall not be present in the PDU, i.e. TPDU starts right after SMSC length octet. • Sending can be cancelled by giving <ESC> character (IRA 27). • <ctrl-Z> (IRA 26) must be used to indicate the ending of PDU.

8.8. +CMGW Command: Write SMS Message to Memory

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CMGW=?**	 Response **OK**

HL7718, HL7748 and HL7749	
Write command Syntax **AT+CMGW [=<oa/da>[,<tooa/ toda>[,<stat>]]] <CR> text is entered <ctrl-Z/ESC>**	Response **+CMGW: <index>** **OK** or **+CMS ERROR: <err>** Parameters See section 8.2 Parameters Definition
Reference 27.005 Rev12	Notes The execute command stores a message to memory storage <mem2>. Memory location <index> of the stored message is returned. By default, message status will be set to "stored unsent"', but parameter <stat> also allows other status values to be given. (ME/TA manufacturer may choose to use different default <stat> values for different message types.)

8.9. +CMSS Command: Send SMS Message from Storage

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CMSS=?**	Response **OK**
Write command Syntax **AT+CMSS= <index>[,<da> [,<toda>]]**	Response **+CMSS: <mr>[,<scts>]** **OK** or **+CMS ERROR: <err>** Parameters See section 8.2 Parameters Definition
Reference 27.005 Rev12	Notes • The write command sends the message with location value <index> from message storage <mem2> to the network (SMS-SUBMIT or SMS-COMMAND). • If a new recipient address <da> is given for SMS-SUBMIT, it will be used instead of the one stored with the message. • Reference value <mr> is returned to the TE on successful message delivery. Optionally (when **+CSMS** <service> value is 1 and network supports) <ackpdu> is returned. Values can be used to identify messages on unsolicited delivery status report result code. • All messages stored in the module may not be forwarded (for instance, carrier messages as SMS replace, etc.)

8.10. +CNMI Command: New Message Indication

HL7718, HL7748 and HL7749

Test command

Syntax
AT+CNMI=?

Response
+CNMI: (list of supported **<mode>**s**), (**list of supported **<mt>**s**), (**list of supported **<bm>**s**), (**list of supported **<ds>**s**), (**list of supported **<bfr>**s**)**
OK

Read command

Syntax
AT+CNMI?

Response
+CNMI: <mode>,<mt>,<bm>,<ds>,<bfr>
OK

Write command

Syntax
+CNMI=[<mode>[,<mt>[,<bm>[,<ds>[,<bfr>]]]]]

Response
OK

Parameters

<mode>
- 0 Buffer unsolicited result codes in the TA. If TA result code buffer is full, indications can be buffered in some other place or the oldest indications may be discarded and replaced with the new received indications.
- 1 Discard indication and reject new received message unsolicited result codes when TA-TE link is reserved. Otherwise forward them directly to the TE.
- 2 Buffer unsolicited result codes in the TA when TA-TE link is reserved (e.g. in on-line data mode) and flush them to the TE after reservation. Otherwise forward them directly to the TE.
- 3 Always forward unsolicited result codes directly to the TE

<mt>
- 0 No SMS-DELIVER indications are routed to the TE
- 1 If SMS-DELIVER is stored in ME/TA, indication of the memory location is routed to the TE using URC **+CMTI:<mem>,<index>**
- 2 SMS-DELIVERs are routed directly to the TE using URC **+CMT: [<alpha>],<length><CR><LF><pdu>** (PDU mode enabled), or **+CMT: <oa>,[<alpha>],<scts>[,<tooa>,<fo>,<pid>,<dcs>,<sca>,<tosca>,<length>]<CR><LF><data>** (text mode enabled)
- 3 Class 3 SMS-DELIVERs are routed directly to TE using unsolicited result codes defined in <mt>=2. Messages of other data coding schemes result in indication as defined in <mt>=1.

<bm>
- 0 No CBM indications are routed to the TE
- 1 If CBM is stored into ME/TA, indication of the memory location is routed to the TE using URC **+CBMI: <mem>,<index>**
- 2 New CBMs are routed directly to the TE using URC **+CBM: <length><CR><LF><pdu>** (PDU mode enabled), or **+CBM: <sn>,<mid>,<dcs>,<page>,<pages><CR><LF><data>** (text mode enabled)
- 3 Class 3 CBMs are routed directly to TE using URCs defined in <bm>=2. If CBM storage is supported, messages of other classes result in indication as defined in <bm>=1

HL7718, HL7748 and HL7749			
	<ds>	0	No SMS-STATUS-REPORTs are routed to the TE
		1	SMS-STATUS-REPORTs are routed to the TE using URC **+CDS: <length><CR><LF><pdu>** (PDU mode enabled), or **+CDS: <fo>,<mr>,[<ra>],[<tora>],<scts>,<dt>,<st>** (text mode enabled)
		2	If SMS-STATUS-REPORT is stored into ME/TA, indication of the memory location is routed to the TE using URC **+CDSI: <mem>,<index>**
	<bfr>	0	TA buffer of URCs defined within this command is flushed to the TE when <mode> = 1 to 3 is entered (OK response will be given before flushing the codes).
		1	TA buffer of URCs defined within this command is cleared when <mode> = 1 to 3 is entered
Reference	27.005 Rev12		

8.11. +CSCA Command: SMS Service Centre Address

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CSCA=?**	 Response **OK**
Read command Syntax **AT+CSCA?**	 Response **+CSCA: <sca>,<tosca>** **OK**
Write command Syntax **AT+CSCA=<sca>[,<tosca>]**	 Response **OK** Parameters See section 8.2 Parameters Definition
Reference 27.005 Rev12	Notes • The write command updates the SMSC address, through which mobile originated SMS is transmitted. • In text mode, the setting is used in the send and write commands. In PDU mode, setting is used by the same commands, but only when the length of the SMSC address coded into <pdu> parameter equals zero.

8.12. +CSMP Command: Set SMS Text Mode Parameters

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CSMP=?**	 Response **OK**
Read command Syntax **AT+CSMP?**	 Response **+CSMP: <fo>,<vp>,<pid>,<dcs>** **OK**
Execute command Syntax **AT+CSMP=[<fo>[,<vp>[,<pid>[,<dcs>]]]]**	 Response **OK** Parameters See section 8.2 Parameters Definition
Reference 27.005 Rev12	Notes • The write command is used to select values for additional parameters needed when SM is sent to the network or placed in storage when text format message mode is selected. • It is possible to set the validity period starting from when the SM is received by the SMSC (<vp> is in range 0 – 255) or define the absolute time of the validity period termination (<vp> is a string). The format of <vp> is given by <fo>. If TA supports the EVPF, see 3G TS 23.040 [3], it shall be given as a hexadecimal coded string (refer e.g. <pdu>) with double quotes. • When storing an SMS-DELIVER from the TE to the preferred memory storage in text mode (refer to **+CMGW**), <vp> field can be used for <scts>.

8.13. +CSMS Command: Select Message Service

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CSMS=?**	 Response **+CSMS:** (list of supported **<service>**s) **OK**
Read command Syntax **AT+CSMS?**	 Response **+CSMS: <service>,<mt>,<mo>,<bm>** **OK**

HL7718, HL7748 and HL7749	
Write command Syntax **AT+CSMS=<service>**	Response **+CSMS: <mt>,<mo>,<bm>** **OK** or **+CMS ERROR: <err>** Parameters **<service>** 0 GSM 03.40 and 03.41 (the syntax of SMS AT commands is compatible with GSM 27.05 Phase 2 version 4.7.0; Phase 2+ features which do not require new command syntax may be supported, e.g. correct routing of messages with new Phase 2+ data coding schemes) **<mt>** Mobile Terminated Messages 0 Type not supported 1 Type supported **<mo>** Mobile Originated Messages 0 Type not supported 1 Type supported **<bm>** Broadcast Type Messages 0 Type not supported 1 Type supported
Reference 27.005 Rev12	Notes The write command selects the messaging service and returns the types of messages supported by the ME.

8.14. +CPMS Command: Preferred Message Storage

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CPMS=?**	Response **+CPMS: (**list of supported **<mem1>**s**), (**list of supported **<mem2>**s**), (**list of supported **<mem3>**s**)** **OK**
Read command Syntax **AT+CPMS?**	Response **+CPMS: <mem1>,<used1>,<total1>,<mem2>,<used2>,<total2>,<mem3>,<used3>, <total3>** **OK**

HL7718, HL7748 and HL7749	
Write command Syntax **AT+CPMS= <mem1> [,<mem2> [,<mem3>]]**	Response **+CPMS: <used1>,<total1>,<used2>,<total2>,<used3>,<total3>** **OK** or **+CMS ERROR: <err>** Parameters See chapter section 8.2 Parameters Definition
Reference 27.005 Rev12	Notes • The write command selects memory storages <mem1>,<mem2>,<mem3> to be used for reading, writing, etc. • Supports UICC storage only.

8.15. +CSDH Command: Show Text Mode Parameters

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CSDH=?**	Response **+CSDH: (**list of supported **<show>**s**)** **OK**
Read command Syntax **AT+CSDH?**	Response **+CSDH: <show>** **OK**
Execute command Syntax **AT+CSDH= [<show>]**	Response **OK** Parameter **<show>** 0 Do not show header values defined in commands **+CSCA** and **+CSMP** (<sca>, <tosca>, <fo>, <vp>, <pid> and <dcs>) nor <length>, <toda> or <tooa> in **+CMT**, **+CMGL**, **+CMGR** result codes for SMS-DELIVERs and SMS-SUBMITs in text mode; for SMS-COMMANDs in **+CMGR** result code, do not show <pid>, <mn>, <da>, <toda>, <length> or <cdata> 1 Show the values in result codes
Reference 27.005 Rev12	Notes The execute command controls whether detailed header information is shown in text mode result codes.

8.16. +CMT Notification: Received SMSPP Content

HL7718, HL7748 and HL7749	
Unsolicited Notification	**+CMT: [<alpha>], <length><CR><LF><pdu>** **+CMT: <oa> ,[<alpha>], <scts> [, <tooa> , <fo>, <pid> , <dcs> , <sca> , <tosca> , <length>] <CR> <LF> <data>**
Reference 27.005 Rev12	Notes • All parameters are extracted from received message. • Detailed header information is shown in text mode result codes according to command **+CSDH**.

9. Data Commands

9.1. +FMI Command: Manufacturer Identification

HL7718, HL7748 and HL7749	
Test command Syntax **AT+FMI=?**	 Response **OK**
Execute command Syntax **AT+FMI**	 Response **(manufacturer identification text)** **OK**
Reference EIA/TIA-578-D	Notes Also see **+CGMI**.
Example	**AT+FMI** **Sierra Wireless** **OK**

9.2. +FMM Command: Model Identification

HL7718, HL7748 and HL7749	
Test command Syntax **AT+FMM=?**	 Response **OK**
Execute command Syntax **AT+FMM**	 Response **(model identification text)** **OK**
Reference EIA/TIA-578-D	Notes Also see **+CGMM**.
Example	**AT+FMM** **HL7749** **OK**

9.3. +FMR Command: Revision Identification

HL7718, HL7748 and HL7749	
Test command Syntax **AT+FMR=?**	 Response **OK**
Execute command Syntax **AT+FMR**	 Response **(model revision identification text)** **OK**
Reference EIA/TIA-578-D	Notes Also see **+CGMR**.
Example	**AT+FMR** **AHL77xx_NQ.01.00.14_0.1.1.20161209.x1210** **OK**

10. GPRS Commands

10.1. +CGATT Command: PS Attach or Detach

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CGATT=?**	 Response **+CGATT:** (list of supported **<state>**s) **OK**
Read command Syntax **AT+CGATT?**	 Response **+CGATT: <state>** **OK**
Write command Syntax **AT+CGATT= <state>**	 Response **OK** or **+CME ERROR: <err>** Parameter **<state>** Indicates the state of PS attachment 0 Detached 1 Attached
Reference	27.007 Rev12

10.2. +CGACT Command: PDP Context Activate or Deactivate

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CGACT=?**	 Response **+CGACT:** (list of supported **<state>**s) **OK**
Read command Syntax **AT+CGACT?**	 Response **[+CGACT: <cid>,<state>]** **[<CR><LF>+CGACT: <cid>,<state>** **[...]]** **OK**

HL7718, HL7748 and HL7749	
Write command Syntax **AT+CGACT=** **[<state>[,<cid>** **[,<cid>[,...]]]]**	Response **OK** or **+CME ERROR: <err>** Parameters **<state>** Indicates the state of PDP context activation 0 Deactivated 1 Activated **<cid>** Numeric parameter which specifies a particular PDP context definition
Reference 27.007 Rev12	Notes The modules include an internal stack that may automatically activate or deactivate PDP context. Use this command with caution.

10.3. +CGCMOD Command: Modify PDP Context

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CGCMOD=?**	Response **+CGCMOD:** (list of **<cid>**s associated with active contexts) **OK**
Execute command Syntax **AT+CGCMOD** **[=<cid>[,<cid>** **[,...]]]**	Response **OK** or **+CME ERROR: <err>** Parameter **<cid>** Numeric parameter which specifies a particular PDP context definition. If no <cid>(s) is/are specified, all active contexts are modified.
Reference	27.007 Rev10

10.4. +CGTFT Command: Traffic Flow Template

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CGTFT=?**	Response **+CGTFT: <PDP_type>,(**list of supported **<packet filter identifier>**s**),(**list of supported **<evaluation precedence index>**s**),(**list of supported **<remote address and subnet mask>**s**),(**list of supported **<protocol number (ipv4) / next header (ipv6)>**s**),(**list of supported **<local port range>**s**),(**list of supported **<remote port range>**s**),(**list of supported **<ipsec security parameter index (spi)>**s**),(**list of supported **<type of service (tos) (ipv4) and mask / traffic class (ipv6) and mask>**s**),(**list of supported **<flow label (ipv6)>**s**),(**list of supported **<direction>**s**)** **[<CR><LF>+CGTFT: <PDP_type>,(**list of supported **<packet filter identifier>**s**),(**list of supported **<evaluation precedence index>**es**),(**list of supported **<remote address and subnet mask>**s**),(**list of supported **<protocol number (ipv4) / next header (ipv6)>**s**),(**list of supported **<local port range>**s**),(**list of supported **<remote port range>**s**),(**list of supported **<ipsec security parameter index (spi)>**s**),(**list of supported **<type of service (tos) (ipv4) and mask / traffic class (ipv6) and mask>**s**),(**list of supported **<flow label (ipv6)>**s**),(**list of supported **<direction>**s**)** **[...]]** **OK**
Read command Syntax **AT+CGTFT?**	Response **[+CGTFT: <cid>,<packet filter identifier>,<evaluation precedence index>,<remote address and subnet mask>,<protocol number (ipv4) / next header (ipv6)>,<local port range>,<remote port range>,<ipsec security parameter index (spi)>,<type of service (tos) (ipv4) and mask / traffic class (ipv6) and mask>,<flow label (ipv6)>,<direction>]** **[<CR><LF>+CGTFT: <cid>,<packet filter identifier>,<evaluation precedence index>,<remote address and subnet mask>,<protocol number (ipv4) / next header (ipv6)>,<local port range>, <remote port range>,<ipsec security parameter index (spi)>,<type of service (tos) (ipv4) and mask / traffic class (ipv6) and mask>,<flow label (ipv6)>,<direction>** **[...]]** **OK**
Write command Syntax **AT+CGTFT=[<cid>,[<packet filter identifier>,<evaluation precedence index>[,<remote address and subnet mask>[,<protocol number (ipv4) / next header (ipv6)>[,<local port range>[,<remote port range>[,<ipsec security parameter index (spi)>[,<type of service**	Response **OK** or **+CME ERROR: <err>** Parameters **<cid>** Numeric parameter which specifies a particular PDP context definition (see **+CGDCONT** and **+CGDSCONT** commands) **<PDP_type>** Type of packet data protocol **<packet filter identifier>** 1 – 16 **<evaluation precedence index>** 0 – 255

HL7718, HL7748 and HL7749	
(tos) (ipv4) and mask / traffic class (ipv6) and mask> **[,<flow label (ipv6)>** **[,<direction>** **]]]]]]]]]**	**<remote address and subnet mask>** 0 – 255 Dot-separated numeric parameter of the form 'a1.a2.a3.a4.m1.m2.m3.m4', for IPv4 and 'a1.a2.a3.a4.a5.a6.a7.a8.a9.a10.a11.a12.a13.a14.a15.a16.m1.m2.m3.m4.m5.m6.m7.m8. m9.m10.m11.m12.m13.m14.m15.m16', for IPv6 **<protocol number (ipv4) / next header (ipv6)>** 0 – 65535 **<local port range>** 0 – 65535 Dot-separated numeric parameter of the form 'f.t.' **<remote port range>** 0 – 65535 Dot-separated numeric parameter of the form 'f.t.' **<ipsec security parameter index (spi)>** 00000000 – FFFFFFFF **<type of service (tos) (ipv4) and mask / traffic class (ipv6) and mask>** 00000 – FFFFF (valid for IPv6 only) **<direction>** Transmission direction in which the packet filter shall be applied 0 Pre-release 7 TFT filter (see 3GPP TS 24.008 [8], table 10.5.162) 1 Uplink 2 Downlink 3 Bi-directional (uplink and downlink)
Reference	27.007 Rev12

10.5. +CGDCONT Command: Define PDP Context

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CGDCONT=?**	Response **+CGDCONT: (**range of supported **<cid>**s**),<PDP_type>,,,(**list of supported **<IPv4AddrAlloc>**s**),(**list of supported **<request_type>**s**),(**list of supported **<P-CSCF_discovery>**s**), (**list of supported **<NSLPI>**s**),(**list of supported **<securePCO>**s**)** **[<CR><LF>+CGDCONT: (**range of supported **<cid>**s**),<PDP_type>,,,(**list of supported **<IPv4AddrAlloc>**s**),(**list of supported **<request_type>**s**),(**list of supported **<P-CSCF_discovery>**s**),(**list of supported **<NSLPI>**s**),(**list of supported **<securePCO>**s**)** **[...]]** **OK**
Read command Syntax **AT+CGDCONT?**	Response **[+CGDCONT: <cid>,<PDP_type>,<APN>[,<IPv4AddrAlloc>** **[,<request_type>[,<P-CSCF_discovery>[,<NSLPI>[,<securePCO>]]]]]]** **[<CR><LF>+CGDCONT: <cid>,<PDP_type>,<APN>[,<IPv4AddrAlloc>** **[,<request_type>[,<P-CSCF_discovery>** **[,<NSLPI>[,<securePCO>]]]]]]** **[...]]** **OK**

HL7718, HL7748 and HL7749

Write command

Syntax

AT+CGDCONT=[<cid>[,<PDP_type>[,<APN>[,<IPv4AddrAlloc>[,<request_type>[,<P-CSCF_discovery>[,<NSLPI>[,<securePCO>]]]]]]]]

Response

OK

Parameters

<cid> 1 – 15 PDP context identifier; numeric parameter which specifies a particular PDP context definition. The parameter is local to the TE-MT interface and is used in other PDP context-related commands.

Possible values for the:

- HL7718 = 3, 4, 6 and 7;
- HL7748 = 1;
- HL7749 = 1

Other values will return ERROR.

<PDP_type> Packet Data Protocol type. A string parameter which specifies the type of packet data protocol.

"IP"	Internet Protocol (IETF STD 5)
"IPV6"	Internet Protocol, version 6 (IETF RFC 2460)
"IPV4V6"	Virtual <PDP_type> introduced to handle dual IP stack UE capability (see 3GPP TS 24.301 [83])
"PPP"	Point to point protocol (IETF STD 51 [104])

Note that only IP, IPV6 and IPV4V6 values are supported for EPS services.

<APN> Access Point Name

A string parameter which is a logical name that is used to select the GGSN or the external packet data network. If the value is null or omitted, then the subscription value will be requested.

<IPv4AddrAlloc> Controls how the MT/TA requests to get IPv4 address information

0	IPv4 address allocation through NAS signaling
1	IPv4 address allocated through DHCP

<request_type> Indicates the type of PDP context activation request for the PDP context; see 3GPP TS 24.301 [83] (subclause 6.5.1.2) and 3GPP TS 24.008 [8] (subclause 10.5.6.17)

0	PDP context is for new PDP context establishment or for handover from a non-3GPP access network (how the MT decides whether the PDP context is for new PDP context establishment or for handover is implementation specific)
1	PDP context is for emergency bearer services
2	PDP context is for new PDP context establishment
3	PDP context is for handover from a non-3GPP access network

<P-CSCF_discovery> Influences how the MT/TA requests to get the P-CSCF address; see 3GPP TS 24.229 [89] annex B and annex L.

0	Preference of P-CSCF address discovery not influenced by +CGDCONT
1	Preference of P-CSCF address discovery through NAS signaling
2	Preference of P-CSCF address discovery through DHCP

<NSLPI> Indicates the NAS signaling priority requested for the PDP context

0	PDP context is to be activated with the value for the low priority indicator configured in the MT
1	PDP context is to be activated with the value for the low priority indicator set to "MS is not configured for NAS signaling low priority"

HL7718, HL7748 and HL7749	
	<securePCO> Specifies if security protected transmission of PCO is requested or not (only applicable for EPS; see 3GPP TS 23.401 [82] subclause 6.5.1.2). 0 Security protected transmission of PCO is not requested 1 Security protected transmission of PCO is requested
Reference 27.007 Rev12	Notes • The modules may automatically set the PDN context. Use this command with caution. • When using an HL7718 with <cid>=3, as per Verizon requirements, that CID should be used to attach without an APN regardless of user configuration. Therefore, <APN> is ignored and AT+CGDCONT? doesn't return <APN> when an HL7718 with <cid>=3 is attached. • On the HL7749, <cid>=2 is defined but only as an internal <cid> not provided to the host. <cid>=2 is therefore displayed in the response to the test command **AT+CGDCONT?** but it is not possible for the host to modify it.

10.6. +CGDSCONT Command: Define Secondary PDP Context

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CGDSCONT=?**	Response **+CGDSCONT: (**range of supported **<cid>**s**),(**list of **<p_cid>**s for active primary contexts**),(**list of supported **<d_comp>**s**),(**list of supported **<h_comp>**s**),(**list of supported **<IM_CN_Signalling_Flag_Ind>**s**)** **OK**
Read command Syntax **AT+CGDSCONT?**	Response **[+CGDSCONT: <cid>,<p_cid>,<d_comp>,<h_comp>,<IM_CN_Signalling_Flag_Ind>]** **[<CR><LF>** **+CGDSCONT: <cid>,<p_cid>,<d_comp>,<h_comp>,<IM_CN_Signalling_Flag_Ind>** **[...]]** **OK**
Write command Syntax **AT+CGDSCONT=[<cid>,<p_cid>[,<d_comp>[,<h_comp>[,<IM_CN_Signalling_Flag_Ind>]]]]**	Response **OK** or **ERROR** Parameters **<cid>** PDP Context Identifier Numeric parameter which specifies a particular PDP context definition. The parameter is local to the TE-MT interface and is used in other PDP context-related commands. **<p_cid>** Primary PDP Context Identifier Numeric parameter which specifies a particular PDP context definition which has been specified by use of the **+CGDCONT** command. The parameter is local to the TE-MT interface.

HL7718, HL7748 and HL7749	
	<d_comp> Data compression 0 Off **<h_comp>** Header compression 0 Off **<IM_CN_Signalling_Flag_Ind>** 0 PDP context is not for IM CN subsystem-related signaling only
Reference	27.007 Rev12

10.7. +CGEREP Command: GPRS Event Reporting

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CGEREP=?**	Response **+CGEREP: (**list of supported **<mode>**s**),(**list of supported **<bfr>**s**)** **OK**
Read command Syntax **AT+CGEREP?**	Response **+CGEREP: <mode>, <bfr>** **OK**
Write command Syntax **AT+CGEREP=** **[<mode>[,<bfr>]]**	Response **OK** or **+CME ERROR: <err>** Parameters **<mode>** 0 Buffer unsolicited result codes in the MT; if MT result code buffer is full, the oldest ones can be discarded. No codes are forwarded to the TE. 1 Discard unsolicited result codes when MT-TE link is reserved (e.g. in on-line data mode); otherwise forward them directly to the TE 2 Buffer unsolicited result codes in the MT when MT-TE link is reserved (e.g. in on-line data mode) and flush them to the TE when MT-TE link becomes available; otherwise forward them directly to the TE **<bfr>** 0 MT buffer of unsolicited result codes defined within this command is cleared when <mode> 1 or 2 is entered 1 MT buffer of unsolicited result codes defined within this command is flushed to the TE when <mode> 1 or 2 is entered (the OK response is given before flushing the codes)
Reference 27.007 Rev12	Notes • This command only works as an enabler/disabler for **+CGEV**; buffer modes are ignored. • **+CGEV** does not support ME CLASS, NW CLASS and ME MODIFY. • ME PDN ACT does not return <reason> and <cid_other>.

10.8. +CGPADDR Command: Show PDP Address

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CGPADDR=?**	 Response **+CGPADDR:** (list of defined **<cid>**s) **OK**
Execute command Syntax **AT+CGPADDR [=<cid>[,<cid> [,...]]]**	 Response **[+CGPADDR: <cid>[,<PDP_addr_1>[,<PDP_addr_2>]]]** **[<CR><LF>+CGPADDR: <cid>,[<PDP_addr_1>[,<PDP_addr_2>]]** **[...]]** **OK** Parameters **<cid>** Numeric parameter which specifies a particular PDP context. If no <cid> is specified, the addresses for all defined contexts are returned. **<PDP_addr_1>, <PDP_addr_2>** Each is a string that identifies the MT in the address space applicable to the PDP. The address may be static or dynamic. For a static address, it will be the one set by the **+CGDCONT** and **+CGDSCONT** commands when the context was defined. For a dynamic address it will be the one assigned during the last PDP context activation that used the context definition referred to by <cid>. Both <PDP_addr_1> and <PDP_addr_2> are omitted if none are available. Both <PDP_addr_1> and <PDP_addr_2> are included when both Ipv4 and Ipv6 addresses are assigned, with <PDP_addr_1> containing the Ipv4 address and <PDP_addr_2> containing the Ipv6 address. The string is given as dot-separated numeric (0-255) parameter of the form: a1.a2.a3.a4 for Ipv4 and a1.a2.a3.a4.a5.a6.a7.a8.a9.a10.a11.a12.a13.a14.a15.a16 for Ipv6.
Reference	27.007 Rev12

10.9. +CGSMS Command: Select Service for MO SMS Messages

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CGSMS=?**	 Response **+CGSMS:** (list of currently available **<service>**s) **OK**
Read command Syntax **AT+CGSMS?**	 Response **+CGSMS: <service>** **OK**

HL7718, HL7748 and HL7749	
Write command Syntax **AT+CGSMS=[<service>]**	Response **OK** Parameter **<service>** Indicates the service or service preference to be used 0 Packet domain 1 Circuit switched
Reference	27.007 Rev12

10.10. +CGCONTRDP Command: PDP Context Read Dynamic Parameters

HL7718, HL7748 and HL7749	
Test command Syntax **AT+CGCONTRDP=?**	Response **+CGCONTRDP**: (list of <**cid**>s associated with active contexts) **OK**
Write command Syntax **AT+CGCONTRDP[=<cid>]**	Response **[+CGCONTRDP: <cid>,<bearer_id>,<apn>[,<local_addr and subnet_mask>[,<gw_addr>[,<DNS_prim_addr>[,<DNS_sec_addr>[,<PCSCF_prim_addr>[,<PCSCF_sec_addr>]]]]]]** **[<CR><LF>+CGCONTRDP: <cid>,<bearer_id>,<apn>[,<local_addr and subnet_mask>[,<gw_addr>[,<DNS_prim_addr>[,<DNS_sec_addr>[,<P-CSCF_prim_addr>[,<PCSCF_sec_addr>]]]]]]** **[...]]** **OK** Parameters **<cid>** 1 – 15 PDP context identifier; numeric parameter which specifies a particular PDP context definition. The parameter is local to the TE-MT interface and is used in other PDP context-related commands (see **+CGDCONT**). **<bearer_id>** Integer type that identifies the bearer, i.e. the EPS bearer in EPS and the NSAPI in UMTS/GPRS **<apn>** String type; logical name used to select the GGSN or the external packet data network **<local_addr and subnet_mask>** String type; IP address and subnet mask of the MT. The string is given as a dot-separated numeric parameter (0 – 255) with form: "a1.a2.a3.a4.m1.m2.m3.m4" for IPv4 or "a1.a2.a3.a4.a5.a6.a7.a8.a9.a10.a11.a12.a13.a14.a15.a16.m1.m2.m3.m4.m5.m6.m7.m8.m9.m10.m11.m12.m13.m14.m15.m16" for IPv6. **<gw_addr>** String type; Gateway Address of the MT. The string is given as dot-separated numeric parameter (0 – 255).

HL7718, HL7748 and HL7749	
	<DNS_prim_addr> String type; IP address of the primary DNS server **<DNS_sec_addr>** String type; IP address of the secondary DNS server **<P_CSCF_prim_addr>** String type; IP address of the primary P-CSCF server **<P_CSCF_sec_addr>** String type; IP address of the secondary P-CSCF server

Reference
27.007 Rev11
	Examples
	//Using an attached HL7718 with <cid> = 3 PDP
	at+cgact?
	+CGACT: 1,0
	+CGACT: 2,0
	+CGACT: 3,1
	+CGACT: 4,0
	+CGACT: 5,0
	+CGACT: 6,0
	+CGACT: 7,0
	+CGACT: 8,0
	+CGACT: 9,0
	+CGACT: 10,0
	+CGACT: 11,0
	+CGACT: 12,0
	+CGACT: 13,0
	+CGACT: 14,0
	+CGACT: 15,0
	OK
	
	at+cgcontrdp=?
	+CGCONTRDP: (3)
	OK
	
	at+cgcontrdp=1
	+CGCONTRDP:
	OK
	
	at+cgcontrdp=3
	+CGCONTRDP: 3,5,"cmw500.rohde-schwarz.com.mnc001.mcc001.gprs",172.22.1.100.255.255.255.248,172.22.1.97,172.22.1.201,,,,
	+CGCONTRDP: 3,5,"cmw500.rohde-schwarz.com.mnc001.mcc001.gprs",254.128.0.0.0.0.0.0.0.0.0.0.0.0.0.1.255.255.255.255.255.255.255.255.255.255.255.255.255.255.255.255.255.255.255.255,,252.1.202.254.0.0.0.0.0.0.0.0.0.0.1,,,
	OK
	
	//Using an attached HL7749 with <cid> = 1 PDP
	at+cgact?
	+CGACT: 1,1
	+CGACT: 2,0
	+CGACT: 3,0
	+CGACT: 4,0
	+CGACT: 5,0
	+CGACT: 6,0
	+CGACT: 7,0
	+CGACT: 8,0

HL7718, HL7748 and HL7749	
	+CGACT: 9,0 **+CGACT: 10,0** **+CGACT: 11,0** **+CGACT: 12,0** **+CGACT: 13,0** **+CGACT: 14,0** **+CGACT: 15,0** **OK** **at+cgcontrdp=?** **+CGCONTRDP: (1)** **OK** **at+cgcontrdp=1** **+CGCONTRDP: 1,5,"cmw500.rohde-schwarz.com.mnc001.mcc001.gprs",172.22.1.100.255.255.255.248,172.22.1.97,172.22.1.201,,,,** **+CGCONTRDP: 1,5,"cmw500.rohde-schwarz.com.mnc001.mcc001.gprs",254.128.0.0.0.0.0.0.0.0.0.0.0.0.0.1.255.255.255.255.255.255.255.255.255.255.255.255.255.255.255.255.255,,252.1.202.254.0.0.0.0.0.0.0.0.0.0.1,,,** **OK** **at+cgcontrdp=2** **+CGCONTRDP:** **OK** //Using a detached HL7749 **at+cgact?** **+CGACT: 1,0** **+CGACT: 2,0** **+CGACT: 3,0** **+CGACT: 4,0** **+CGACT: 5,0** **+CGACT: 6,0** **+CGACT: 7,0** **+CGACT: 8,0** **+CGACT: 9,0** **+CGACT: 10,0** **+CGACT: 11,0** **+CGACT: 12,0** **+CGACT: 13,0** **+CGACT: 14,0** **+CGACT: 15,0** **OK** **at+cgcontrdp=?** **+CGCONTRDP: ()** **OK** **at+cgcontrdp=1** **+CGCONTRDP:** **OK** **at+cgcontrdp=2** **+CGCONTRDP:** **OK**

11. NV Commands

11.1. Auto Generation of NV backup Files

There are 3 NV partitions in flash used by the HL77xx Firmware:

- Static calibrated partition
- Static config parameters partition
- Dynamic default parameters partition

NV backup feature only backs up calibrated and static config partition together. The dynamic partition is never backed up, although it is reset to the default configuration when a backup recovery is performed.

The firmware automatically generates NV backup files from existing NV data (calibration and static config parameters only) at approximately 12 seconds after boot if one of the following conditions are met:

- NV backup does not exist
- NV backup has been corrupted unexpectedly

An automatic backup file generation is notified with **+NVBU_IND** with <status>=0 on all AT ports.

11.2. Auto Recovery from Backup NV Files

NV recovery is automatically done if an NV corruption is detected during NV initialization at boot.

The firmware automatically recovers NV data from available NV backup when:

- The calibrated partition is corrupted
- The static config partition is corrupted
- A file in the dynamic partition is missing

This is notified with **+NVBU_IND** with <status>=3 on all AT ports.

Manual NV data restores all data from the backup file to the original NV partition.

If the module firmware crashes with 10 consecutive loops and a full restore has not been performed before, the firmware performs a full restore of all NV data items. Only consecutive crashes that happened within 12 seconds after the module boots is counted for this reset loop detection.

11.3. +NVBU Command: NV Backup Status and Control

HL7718, HL7748 and HL7749	
Test command Syntax **AT+NVBU=?**	 Response **+NVBU: (0-2)** **OK**
Read command Syntax **AT+NVBU?**	Returns list of NV backup with the format: **+NVBU: <file id>,<backup date>,<backup firmware version>** Response **[+NVBU:0,<backup date>,<backup firmware version>]** **OK** Error case **ERROR** when no backup is available Parameters **<file id>** Backup file ID corresponding to one NV partition in non-volatile memory **<backup date>** Generation date of the NV backup **<backup firmware version>** Firmware version used to generate the NV backup
Write command Syntax For <mode>=0 or 1: **AT+NVBU=** **<mode>** **[,<parti_id>]** For <mode>=2: **AT+NVBU=** **<mode>[,<clear>]**	 Response For <mode>=0 or 1: **OK** For <mode>=2 and <clear>=0: **<log data 0>** **[<log data 1>]** **…** **[<log data n>]** **OK** For <mode>=2 and <clear>=1: **OK** Parameters **<mode>** 0 Generate backup of both static calibrated and static config NV data to NV backup partition 1 Restore all NV data from the NVM backup partition and default dynamic parameters 2 List logs of NV backup operations **<log data>** NV backup operations log data **<parti_id>** 0 Static calibrated and static config NV 1 Same as 0; kept for retro compatibility purpose 2 Same as 0; kept for retro compatibility purpose 3 Same as 0; kept for retro compatibility purpose

HL7718, HL7748 and HL7749	
	<clear log> 0 Read log 1 Clear log
Unsolicited Notification	**+NVBU_IND:<status>,<file id>,<errcode>** For <status>=0: **+NVBU_IND:<status>,<file id>,<errcode>,<backup date>,<backup firmware version>** For <status>=1 & 2: **+NVBU_IND:<status>,<file id>,<errcode>,<cause>,<backup date used for restore>,<backup firmware version used for restore>** Parameters **<status>** NV backup status 0 NV backup generation 1 NV backup restoration 2 Backup data restored (when NV corruption is detected during NV initialization) **<errcode>** Error code 0 No error 1 General error 2 Reserved 3 Flash erase error 4 Backup file corrupted 5 Flash read / write error **<cause>** Root cause 0 User request 1 Modem firmware problem 2 Whole NV partition structure corrupted 3 NV Calibrated partition corrupted 4 NV Static config partition corrupted 5 NV dynamic parameter missing **<backup date>** NV backup generation date **<backup firmware version>** Firmware version used to generate the NV backup **<backup date used for restore>** Generation date of the NV backup that was used for the NV restore **<backup firmware version used for restore>** Firmware version used to generate the NV backup that was used for the NV restore

HL7718, HL7748 and HL7749	
Reference Sierra Wireless Proprietary	Notes • Status of operations for <mode>=0 and <mode>=1 is notified by **+NVBU_IND** unsolicited notifications with <status>=0 and <status>=1 respectively on the AT port executed the write command. • Execution of the write command with <mode>=1 is followed by a modem reboot automatically; NVs are restored to their default values on booting. • The log file is limited to 4ko. • No SIM card is required for this command. • The backup date and the backup firmware are displayed only when available (i.e. backup not corrupted) • <mode>=2 is for retrieving log for R&D analysis and not fully documented; generally: ▪ USER=0 for operations triggered by the firmware ▪ USER=1 for manual operations
Examples	# automatic backup files generation, notified by +NVBU_IND **+NVBU_IND: 0,0,0,"2015/07/22-04:23:33", "AHL77xx_NQ.01.00.27_0.2.2.20170207.x1210"** # manual generation of backup files from existing NV partitions **AT+NVBU=0,3** **OK** **+NVBU_IND: 0,0,0,"2015/07/22 04:23:39", "AHL77xx_NQ.01.00.27_0.2.2.20170207.x1210"** # manual restore of backup files to original NV partitions **AT+NVBU=1,3** **OK** **+NVBU_IND: 1,0,0,0,"2015/07/22 04:23:39", "AHL77xx_NQ.01.00.27_0.2.2.20170207.x1210 "** <module reboots automatically> # to retrieve the list of NV related operations done by the Firmware **at+nvbu=2** **[I] Generate Backup from mtd7 to mtd6** **[I] Date: Thu Jan 1 00:24:28 UTC 1970** **[I] Tar NVM files nvm/etc/static-config/ nvm/bsp/** **[I] Files to exclude: --exclude nvm/bsp/ltepp --exclude nvm/bsp/plmntable --exclude nvm/bsp/readme.txt** **[I] nv** **m/etc/static-config/ nvm/etc/static-config/AVMS nvm/etc/static-config/HostInfo nvm/etc/static-config/Identification nvm/bsp/ nvm/bsp/dop nvm/bsp/fcf3 nvm/bsp/scf3 nvm/bsp/fcf28 nvm/bsp/prsnp nvm/bsp/scf28 nvm/bsp/bspfilesbp nvm/bsp/bandbp nvm/bsp/gsysbp nv** **m/bsp/phybp3 nvm/bsp/phybp28** **[I] Tar all files** **[I] tmp/backup_header tmp/nvm_backup.tar** **[I] Erase 7 flash blocks from offset 4096 on /dev/mtd6** **[I] Flash erase for 7 blocks from offset 4096 on /dev/mtd6 successful** **[I] Write 1st backup** **[I] Erase 7 flash bloc** **ks from offset 32768 on /dev/mtd6** **[I] Flash erase for 7 blocks from offset 32768 on /dev/mtd6 successful** **[I] Write 2nd backup**

HL7718, HL7748 and HL7749	
	[I] Backup wrote into mtd6 ! **[I] Check mtd6 backup with option --write** **[I] mtd6 is not corrupted** **[I] Backup generation successful!** **[I] +NVBUIND: 0, 0, 0, 1970/01/01-00:24:28, AHL77xx_NQ.01.00.35_0.4.0.20170404.x1210, a104bd8ecb6ba97d36cf3384fd7f072f /tmp/nvm_backup.tar** # recovery in calibrated NV partition after Firmware boot # note that the data is also logged by NV log (i.e. AT+NVBU=2) **+NVBU_IND: 2,0,0,3,"2015/07/22 04:23:39", "AHL77xx_NQ.01.00.27_0.2.2.20170207.x1210 "**

12. Trace Commands

12.1. +SWITRACECFG Command: Enable and Tune Specific Module Traces

HL7718, HL7748 and HL7749	
Test command Syntax **AT+ SWITRACECFG=?**	Response **+SWITRACECFG: 0** **+SWITRACECFG: enable,(**list of supported **<what>**s**)[,(**list of supported **<how>**s**)]** **+SWITRACECFG: disable,(**list of supported **<what>**s**)** **+SWITRACECFG: set,(**list of supported **<what>**s**),(**list of supported **<level>**s**)** **+SWITRACECFG: custom,<args>…** **OK**
Read command Syntax **AT+ SWITRACECFG?**	Response **ERROR**
Write command Syntax If <subcmd>=0: **AT+ SWITRACECFG= <subcmd>** If <subcmd>=enable: **AT+ SWITRACECFG= <subcmd>, <what>[,<how>]** If <subcmd>=set: **AT+ SWITRACECFG= <subcmd>, <what>, <loglevel>** If <subcmd>=custom: **AT+ SWITRACECFG= <subcmd>, <args …>**	Response **OK** or **ERROR** Parameters **<subcmd>** Subcommand 0 Disable all traces Enable Enable specific traces; sets a mid-level logging by default Disable Disable specific traces Set Tune specific traces. “Enable” must be issued prior to this subcommand with the same <what> parameter Custom Custom trace configuration **<what>** Traces to enable/disable/set. applogs Application logs/log levels. Application logs are available for download through the **+SWITRACEGET** command modemlogs Modem logs/log levels. Modem logs are available either on the USB serial gadget or through the **+SWITRACEGET** command depending on parameter <how>. **<how>** Applicable when <what>=modemlogs only ext Modem logs will be available through the external USB serial gadget as a continuous stream of data int Modem logs will be recorded on the module and available for download through the **+SWITRACEGET** command

HL7718, HL7748 and HL7749	
	<level> Level of logging 1 – 5 For application log levels; 1 is the lowest log level 1 – 6 For modem log levels; 1 is the lowest log level **<args>** One or more arguments
Reference Sierra Wireless Proprietary	Notes • This Sierra Wireless proprietary command is targeted to the customer but is to be issued on Sierra request only for diagnosis purposes. • This command is cumulative and the settings are persistent, but will only take effect at the next boot.

Examples	// Enable applications logs
	AT+SWITRACECFG=enable,applogs
	
	// Enable modem logs; save them to module
	AT+SWITRACECFG=enable,modemlogs,int
	
	// Module reboot is required for changes to take effect and get the logs using
	// **+SWITRACEGET**
	
	// Reset logging to none (both modem and app)
	AT+SWITRACECFG=0
	
	//Reboot again

12.2. +SWITRACEGET Command: Upload Module Logs to Host

HL7718, HL7748 and HL7749	
Test command Syntax **AT+ SWITRACEGET= ?**	Response **+SWITRACEGET: (bootlogs,applogs,modemlogs),<ip:port>** **OK**
Read command Syntax **AT+ SWITRACEGET?**	Response **ERROR**
Write command Syntax **AT+ SWITRACEGET= <what>,<ip:port>**	Response **+SWITRACEGET: <size>** **OK** or **ERROR**

HL7718, HL7748 and HL7749	
	Parameters **<what>** Traces to download applogs Application logs modemlogs Modem logs. Only possible when modemlogs are enabled in “ext” mode using the **+SWITRACECFG** command bootlogs Boot logs **<ip:port>** IP address and TCP port of the host (for example: 10.0.0.100:8080). The host must be ready to receive prior to issuing this command by listening to the given TCP port on the given host address.
Examples	// Download application and modem logs to host with IP 10.0.0.100 on port 8080 **AT+SWITRACEGET=modemlogs,10.0.0.100:8080** **AT+SWITRACEGET=applogs,10.0.0.100:8080**

13. LWM2M Commands

13.1. +KLWMTOMSEL: LWM2M Instance Selection

HL7718, HL7748 and HL7749	
Test command Syntax **AT+ KLWMTOMSEL=?**	 Response **+KLWMTOMSEL: (**list of supported **<configuration>**s**),(**list of supported **<urc_mode>**s**)**
Read command Syntax **AT+ KLWMTOMSEL?**	 Response **+KLWMTOMSEL: <configuration>,<urc_mode>** **OK**
Write command Syntax **AT+ KLWMTOMSEL= <configuration> [,<urc_mode>]**	 Response **OK** or **ERROR** Parameters **<configuration>** 0 AirVantage 1 Operator **<urc_mode>** 0 Disable the URC presentation for the result of instance selection 1 Enable the URC presentation for the result of instance selection
Unsolicited Notification	**+KLWMTOMSEL_IND:<configuration>,<errorcode>[,<additional errorcode>]** Parameters **<configuration>** 0 Airvantage 1 Operator 2 Unknown **<errcode>** 0 No error 1 Error occurred, recovery procedure is successful 2 Error occurred, reset instance to factory settings (AirVantage instance is selected, AVMS credentials are set) 3 Fatal error **<additional errcode>** 0 – 4095 Additional error code
Reference Sierra Wireless Proprietary	Notes URC is not sent upon direct use of **+KLWMTOMSEL** except for error cases. URC is sent to notify the user that another “operation” (AT command, application process, etc.) changed the instance selection, or that a recovery procedure has been processed.

HL7718, HL7748 and HL7749	

Examples	**AT+KLWMTOMSEL=1,0**
	OK
	// Operator instance is selected, URCs are disabled
	
	AT+KLWMTOMSEL=0
	OK
	// AirVantage instance is selected, URCs are enabled
	
	+KLWMTOMSEL_IND=0,0
	AT+KLWMTOMSEL?
	+KLWMTOMSEL:0,1
	// AirVantage instance is now the current LWM2M instance. No error to report
	
	+KLWMTOMSEL_IND=0,1,600
	AT+KLWMTOMSEL?
	+KLWMTOMSEL:0,1
	// AirVantage instance is now the current LWM2M instance. An error occurred but the
	// recovery procedure is successful. The instance is fully functional.
	
	+KLWMTOMSEL_IND=1,2,2564
	AT+KLWMTOMSEL?
	+KLWMTOMSEL:1,1
	// Operator instance is now the current LWM2M instance. An error occurred but the
	// recovery procedure is successful. The instance is fully functional. However, all resources
	// have been reset to factory settings, including AVMS credentials.
	
	+KLWMTOMSEL_IND=2,3,597
	AT+KLWMTOMSEL?
	+KLWMTOMSEL:2,1
	// There are no LWM2M instances currently available. A fatal error occurred which cannot
	// be recovered. LWM2M is not operational.

14. AVMS Commands

14.1. +WDSI: Device Services Indications

HL7718, HL7748 and HL7749	
Test command Syntax **AT+WDSI=?**	 Response **+WDSI:** (list of supported **<Level>**s) **OK**
Read command Syntax **AT+WDSI?**	 Response **[+WDSI: <Level>]** **OK**
Write command Syntax **AT+WDSI= <Level>**	 Response **OK** or **+CME ERROR <err>** Parameters **<Level>** Indication level, bit field (default value = 0) Bit set to 0 = Indication deactivated Bit set to 1 = Indication activated 0 No indication 1 Activate the initialization end indication (<Event> = 0) 16 Activate the package download indications (<Event> = 9, 10 and 11) 32 Activate the certified downloaded package indication (<Event> = 12 and 13) 64 Activate the update indications (<Event> = 14, 15 and 16) 256 Activate download progress indication (<Event> = 18) 4095 Activate all above indications **<Event>** 0 Device services are initialized and can be used. Devices services are initialized when the SIM PIN code is entered and a dedicated NAP is configured (see **+WDSS** command) 9 A package is available on the server and can be downloaded by the embedded module. A <Data> parameter is returned indicating the package size in kB 10 A package was successfully downloaded and stored in flash 11 An issue happens during the package download. If the download has not started (**+WDSI: 9** indication was not returned), this indication indicates that there is not enough space in the device to download the update package. If the download has started (**+WDSI: 9** indication was returned), a flash problem implies that the package has not been saved in the device 12 Downloaded package is certified to be sent by the AirPrime Management Services server 13 Downloaded package is not certified to be sent by the AirPrime Management Services server

HL7718, HL7748 and HL7749	
	14 Update will be launched 15 OTA update client has finished unsuccessfully 16 OTA update client has finished successfully 18 Download progress. This event is returned without <Data> parameter to indicate that a download starts. During the download, a percentage progress is indicated in <Data> parameter **<Data>** Specific data for some <Event> For<Event>=9, <Data> indicates the package size in bytes, which will be downloaded For<Event>=18, <Data> indicates the download progress in percentage
Unsolicited Notification	**+WDSI: <Event>[,<Data>]**
Notes	• This command is available when the embedded module has finished its initialization. • The <Level> parameter is stored in non-volatile memory.
Examples	**AT+WDSI=?** **+WDSI: (0-4095)** **OK** **AT+WDSI?** **+WDSI: 0** *// All indications are deactivated* **OK** **AT+WDSI=4095** **OK** **+WDSI: 9,1000** *// A package will be downloaded; the size is 1 kbytes* **+WDSI: 18,"1%"** *// 1% was downloaded* **+WDSI: 18,"100%"** *// The whole package was downloaded* **+WDSI: 10** *// The whole package was stored in flash*

14.2. +WDSS: Device Services Session

HL7718, HL7748 and HL7749	
Test command Syntax **AT+WDSS=?**	 Response **+WDSS: 0,**(Max length for **<Apn>**),(Max length for **<User>**),(Max length for **<Pwd>**) **+WDSS: 1,**(list of supported **<Action>**s for this **<Mode>**) **OK**
Read command Syntax **AT+WDSS?**	 Response **[+WDSS: 0,<Apn>[,<User>]]** **[+WDSS: 1,1]** **OK**

HL7718, HL7748 and HL7749	
Write command Syntax For <Mode>=0: **AT+WDSS=<Mode>,<Apn>[,<User>[,<Pwd>]]** For <Mode>=1: **AT+WDSS=<Mode>,<Action>**	Response **OK** or **ERROR** Parameters **<Mode>** 0 PDP context configuration for Device Services 1 User Initiated connection to the Device services server **<Apn>** Access Point Name for Devices Services. String type up to 50 characters **<User>** Login for the APN. String type, up to 30 characters **<Pwd>** Password for the APN. String type, up to 30 characters **<Action>** For <Mode>=1 only 1 Establish a connection to the Device Services Server
Examples	**AT+WDSS=?** **+WDSS: 0, 50,30,30** **+WDSS: 1,1** **OK** **AT+WDSS?** **OK** *//No APN defined* **AT+WDSS=0,“Sierra Wireless”,,“password”** **ERROR** *//Illegal null user* **AT+WDSS=0,“Sierra Wireless”,“user”** **ERROR** *//No password provided* **AT+WDSS=0,””** **ERROR** *//Illegal empty APN* **AT+WDSS=0,“Sierra Wireless”,“”** **ERROR** *//Illegal empty user* **AT+WDSS=0,“Sierra Wireless”,“user”,“”** **ERROR** *//Illegal empty password* **AT+WDSS=0,“Sierra Wireless”** *//Define the APN for the Device* *//Services Sierra Wireless* **OK** **AT+WDSS?** **+WDSS: 0,“Sierra Wireless”** **+WDSS: 1,1** **OK** **AT+WDSS=1,1** *//Initiation of a connection to the Device Services server* **OK**

HL7718, HL7748 and HL7749	
Notes	• <Apn>, <User> and <Pwd> parameters are stored in non-volatile memory without using the **AT&W** command. **AT&F** has no effect on these parameters. • <User> and <Pwd> are mutually inclusive – if either parameter is supplied, the other must be supplied, too. • <User> and <Pwd>, when supplied, must be non-empty strings enclosed in double quotes. • The sizes returned by **AT+WDSS=?** are to be taken for the strings without the double quotes. • The **AT+WDSS?** command only returns **OK** if no APN is defined. • **AT+WDSS=0**, is provided for legacy compatibility only and has no effect on PDN configurations on LTE networks. • **+WDSS=1,1** response is provided for legacy compatibility only. It does not reflect the actual LWM2M client connection status to the Device Services server. • As per LWM2M protocol specification, the connection to the Device Services server is periodically initiated. The **AT+WDSS=1,1** command will force immediate connection when issued.

15. Error Codes

Table 2. CME Error Codes

<err>	Meaning
0	Phone failure
1	No connection to phone
2	Phone-adapter link reserved
3	Operation not allowed
4	Operation not supported
5	PH-SIM PIN required
6	PH-FSIM PIN required
7	PH-FSIM PUK required
10	SIM not inserted
11	SIM PIN required
12	SIM PUK required
13	SIM failure
14	SIM busy
15	SIM wrong
16	Incorrect password
17	SIM PIN2 required
18	SIM PUK2 required
20	Memory full
21	Invalid index
22	Not found
23	Memory failure
24	Text string too long
25	Invalid characters in text string
26	Dial string too long
27	Invalid characters in dial string
30	No network service
31	Network timeout
32	Network not allowed - emergency call only
40	Network personalization PIN required
41	Network personalization PUK required
42	Network subset personalization PIN required
43	Network subset personalization PUK required
44	Service provider personalization PIN required
45	Service provider personalization PUK required
46	Corporate personalization PIN required
47	Corporate personalization PUK required
48	Hidden key required (this key is required when accessing hidden phonebook entries)
49	EAP method not supported
50	Incorrect parameters

<err>	Meaning
51	Command implemented but currently disabled
52	Command aborted by user
53	Not attached to network due to MT functionality restrictions
54	Modem not allowed - MT restricted to emergency calls only
55	Operation not allowed because of MT functionality restrictions
56	Fixed dial number only allowed - called number is not a fixed dial number (refer to 3GPP TS 22.101 [147])
57	Temporarily out of service due to other MT usage
58	Language/alphabet not supported
59	Unexpected data value
60	System failure
61	Data missing
62	Call barred
63	Message waiting indication subscription failure
99	Resource limitation
100	Unknown

Table 3. CMS Error Codes

<err>	Meaning
1	Unassigned (unallocated) number
8	Operator determined barring
10	Call barred
21	Short message transfer rejected
27	Destination out of service
28	Unidentified subscriber
29	Facility rejected
30	Unknown subscriber
38	Network out of order
41	Temporary failure
42	Congestion
47	Resources unavailable, unspecified
50	Requested facility not subscribed
69	Requested facility not implemented
81	Invalid short message transfer reference value
95	Invalid message, unspecified
96	Invalid mandatory information
97	Message type non-existent or not implemented
98	Message not compatible with short message protocol state
99	Information element non-existent or not implemented
111	Protocol error, unspecified
127	Interworking, unspecified
128	Telematic interworking not supported
129	Short message Type 0 not supported

<err>	Meaning
130	Cannot replace short message
143	Unspecified TP-PID error
144	Data coding scheme (alphabet) not supported
145	Message class not supported
159	Unspecified TP-DCS error
160	Command cannot be executed
161	Command unsupported
175	Unspecified TP-Command error
176	TPDU not supported
192	SC busy
193	No SC subscription
194	SC system failure
195	Invalid SME address
196	Destination SME barred
197	SM Rejected-Duplicate SM
198	TP-VPF not supported
199	TP-VP not supported
208	D0 SIM SMS storage full
209	No SMS storage capability in SIM
210	Error in MS
211	Memory Capacity Exceeded
212	SIM Application Toolkit Busy
213	SIM data download error
255	Unspecified error cause
300	ME failure
301	SMS service of ME reserved
302	Operation not allowed
303	Operation not supported
304	Invalid PDU mode parameter
305	Invalid text mode parameter
310	SIM not inserted
311	SIM PIN required
312	PH-SIM PIN required
313	SIM failure
314	SIM busy
315	SIM wrong
316	SIM PUK required
317	SIM PIN2 required
318	SIM PUK2 required
320	Memory failure
321	Invalid memory index
322	Memory full
330	SMSC address unknown

<err>	Meaning
331	no network service
332	Network timeout
340	NO +CNMA ACK EXPECTED
500	Unknown error