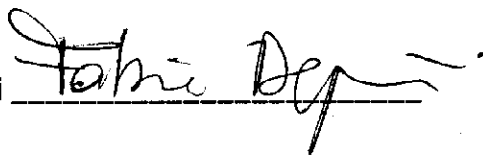


**PROTOCOL IMPLEMENTATION CONFORMANCE STATEMENT (PICS)  
AND  
PROTOCOL IMPLEMENTATION EXTRA INFORMATION FOR TESTING (PIXIT)  
FOR THE MOBILE STATION  
MODEL TRIZIUM**

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# 1 Revision index

Issues	Changes	Date
0	Initial revision starting from "G83_PIXIT_rev4.doc"	04/06/04

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## 2 Protocol Implementation Conformance Statement (PICS)

### 2.1 LAPDm protocol (GSM 04.05 and 04.06)

#### 2.1.1 Simplified protocol - GSM 04.06 clause 6

In simplified protocol we don't have duplication of at most one layer 3 data unit (in the MS to network direction); when receiving, the data link layer ignores RNR frames without notification; no spontaneous transmission of RR or REJ is supported.

#### 2.1.2 Management of SAPI = 3 - GSM 04.11 subclause 2.3

The Radio Resource Management in the Mobile Station establishes the acknowledged mode of operation on SAPI 3 whenever needed.

### 2.2 Mobility management

#### 2.2.1 IMSI detach initiation by the MS - GSM 04.08 subclause 4.3.4.1

During a location updating, if an IMSI detach has to be performed (SIM or power off), the IMSI detach is delayed until the location updating is finished, or can be omitted.

#### 2.2.2 IMSI detach completion by the MS - GSM 04.08 subclause 4.3.4.3

If possible, the MS delays the local release of the channel to allow a normal release from the network after a detach by power off command, and this delay is of 5 s.

If not possible the RR sub-layer on the MS side aborts without waiting for anything from the network.

#### 2.2.3 MM specific procedures - GSM 04.08 subclause 4.4 and 4.5.1.1

During the lifetime of an MM specific procedure, if an MM connection establishment is required by a CM-entity, this request will be delayed until the running MM specific procedure is terminated and the RR connection is released.

#### 2.2.4 Receiving an MM STATUS message - GSM 04.08 subclause 4.6

If the MM-entity of the Mobile Station receives a MM-STATUS message no state transition and no specific action is taken as seen from the radio interface.

### 2.3 Call control

#### 2.3.1 Status enquiry procedures - GSM 04.08 subclause 5.5.3.1

The MS doesn't send a STATUS ENQUIRY.

#### 2.3.2 Receiving a STATUS message by a CC entity - GSM 04.08 subclause 5.5.3.2

The mobile station does not send STATUS ENQUIRY to the network. It analyses the STATUS ENQUIRY received and answers.



### 2.3.3 *Called side compatibility checking - GSM 04.08 annex B.3*

The CC call states are considered compatible between the mobile station and the network when they are the same.

### 2.3.4 *Disconnect on incoming call*

The mobile equipment offers the possibility to disconnect an incoming call after alerting, but before connecting.

## 2.4 *Layer 1*

### 2.4.1 *Optional storage of BCCH carrier information - GSM 05.08 subclause 6.3*

The MS includes optional storage of BCCH carrier information only on the SIM. For instance, the MS stores the BCCH carriers in use by the PLMN accessed when it was last active in the GSM network, and it may store BCCH carriers for more than one PLMN.

### 2.4.2 *Tav - GSM 05.08 subclause 6.2*

The averaging of the last five measurements is done over the period of 3,5 s.

## 2.5 *Autocalling -(ref.: GSM 02.07, annex 1)*

Cause number 27 is implemented in category 2.

## 2.6 *Transient states*

State U6 is transient

State U7 is not transient

State U9 is not transient

State U12 is not transient

### 3 Protocol Implementation Extra Information for Testing (PIXIT)

#### 3.1 Basic characteristics

##### 3.1.1 Type of antenna

With a connector (50 Ohm) allowing the connection of an external antenna.

##### 3.1.2 Power supply

Type of power supply: external DC;  
Minimum voltage: 3,4 V;  
Nominal voltage: 3.8 V;  
Maximum voltage: 4,2 V  
Details of MS shut-down voltage: 3,3 V

##### 3.1.3 Power class of the MS

See Table 1: Types of Mobile Stations.

##### 3.1.4 Channel modes supported

Speech FR.  
Speech EFR.  
Speech HR.  
Data 14.5 kbit/s FR  
Data 12 kbit/s FR  
Data 6 kbit/s FR  
Data 3.6 kbit/s FR

##### 3.1.5 Teleservices supported

See Table 3: Teleservices

##### 3.1.6 Supplementary services supported

Call forwarding: see Table 5: Supplementary Services.  
Call restriction: see Table 5: Supplementary Services.  
Handling of undefined GSM Supplementary Services: Implemented.

##### 3.1.7 Bearer services supported

See Table 4: Bearer Services.

##### 3.1.8 SIM removal

Removal of the SIM is possible without disconnection of the power supply if CCIN pin provided on the external SIM holder connector.

##### 3.1.9 Classmark

- Mobile station classmark 1:



- Revision level  
0 1 Used by phase 2 MSs
- ES IND  
1 "Controlled Early Classmark Sending" option is implemented
- A5/1 algorithm supported  
0 encryption algorithm A5/1 available
- RF power capability  
1 0 0 class 4 for GSM  
0 0 1 class 1 for DCS-1800 and PCS-1900
- Mobile station classmark 2:
  - Revision level  
0 1 Used by phase 2 MSs
  - ES IND  
1 "Controlled Early Classmark Sending" option is implemented
  - A5/1 algorithm supported  
0 encryption algorithm A5/1 available
  - RF power capability  
0 1 1 class 4 for GSM  
0 0 0 class 1 for DCS-1800 and PCS-1900
  - PS capability (pseudo-synchronisation capability)  
1 PS capability present
  - SS Screening Indicator  
0 1 defined in TS GSM 04.80
  - SM capability  
1 Mobile Station supports mobile terminated point-to-point SMS
  - VBS notification reception  
0 no VBS capability or no notifications wanted
  - VGCS notification reception  
0 no VGCS capability or no notifications wanted
  - FC Frequency Capability  
1 The mobile station supports the extension band G1 in addition to the primary GSM band.
  - Classmark 3  
1 Additional MS capability information
  - A5/3 algorithm supported  
0 encryption algorithm A5/3 not available
  - A5/2 algorithm supported  
1 encryption algorithm A5/2 available
- Mobile station classmark 3:
  - Multiband supported  
1 1 0 E-GSM and DCS-1800/PCS-1900 bands
  - A5/4 algorithm supported  
0 encryption algorithm A5/4 not available



- A5/5 algorithm supported  
0 encryption algorithm A5/5 not available
- A5/6 algorithm supported  
0 encryption algorithm A5/6 not available
- A5/7 algorithm supported  
0 encryption algorithm A5/7 not available
- Associated radio capability 1  
1 0 0 class 4 for GSM
- Associated radio capability 2  
0 0 1 class 1 for DCS-1800 / PCS-1900

### 3.1.10 Type of SIM/ME interface (ref. GSM 11.11 and GSM 11.12)

3V SIM/ME interface only ( 3V technology ME)

### 3.2 Man machine interface

- To display the TRIZIUM SW version send the AT command "AT+CGMR?".
- To display the TRIZIUM IMEI, send the AT command "AT+CGSN?".
- When a command is correctly executed, an "OK" message is displayed.
- When a command is not correctly executed, an error message is displayed. The error message format depends on the AT+CMEE command setting. By default, a simple "ERROR" string is displayed. To get more diagnostic information when an AT command gives an error return, it is necessary to send the AT command "AT+CMEE=1", or "AT+CMEE=2" before starting to issue other commands. The "AT+CMEE=1" command is used to set the numeric error format, so that when an error occurs the string "+CME ERROR: <err>" is displayed, where <err> is a numeric code (see GSM 07.07, par. 9.2). The "AT+CMEE=2" command is used to set the alphanumeric error format, so that when an error occurs the string "+CME ERROR: xx" is displayed, where xx is the string corresponding to the error numeric code (see GSM 07.07, par. 9.2). Before starting a test session the "AT+CMEE=2" command should be issued, in order to get a complete verbose information when an error occurs.
- To send a call manually send the AT command "ATDxxxx", where xxxx is the telephone number to be dialled. In case of a voice call, append a ';' at the end of the command string. In case of successful voice operation, an "OK" message is displayed, regardless of the fact that the dialled string is a phone number or a Supplementary Service control string. In case of a Supplementary Service control string, no additional information is given. In case of unsuccessful operation, an error message is displayed (see paragraph 2.5.4 ). If the call has been disconnected, only a "NO CARRIER" indication is given. To get more information about the reason why the call was disconnected (e.g. ACM max exceeded) send the AT command "AT+CEER?".
- To originate a call to the phone number in phonebook entry location n send the AT

command "ATD>n;".

- When on display appears "RING" or "+CRING: xxxx" send the AT command "ATA" to take the call. The extended format indication "+CRING: xxxx" can be enabled by issuing the AT command "AT+CRC=1". The "xxxx" indication is one of the following strings, listed in GSM 07.07, par. 6.11: "ASYNC", "SYNC", "REL ASYNC", "REL SYNC" for a data call, "FAX" (facsimile call), "VOICE" (normal voice call).
- To end all calls except a possible waiting call send the AT command "ATH".
- To start an emergency call, send the AT command "ATD112;".
- To send DTMF tones send the AT command "AT+VTS=key", where "key" is the send to send (0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, \*, #).
- To set the PLMN in automatic mode send the AT command "AT+COPS=0".
- To set the PLMN in manual mode send the AT command "AT+COPS=1,<format>,<network>", where <format> is an integer in the range 0...2, indicating the format of the following <network> field (network to be selected). A <format> value of 0 indicates that the network is specified using its long name (see network table). A <format> value of 1 indicates that the network is specified using its short name (if available); a <format> value of 2 indicates that the network is specified using its numeric code (five digits code given by country code and network code, e.g. 22210).
- To display a list of operators present in the network send the AT command "AT+COPS=?", that produces a list of strings "+COPS: <stat>, long alphanumeric <network>, short alphanumeric <network>, numeric <network>". If a format is not available, an empty string is displayed instead.
- The current PLMN can be queried by giving the AT command "AT+COPS=?", that produces the output string "+COPS: <mode>, <format>, <network>". <Mode> is an integer value (0 indicates an automatically selected network, 1 a manually selected network). <Format> and <network> fields are defined as above.
- The country code is translated in the country name according to the Country Table. The country codes not present in the Country Table are not translated, therefore are displayed as they are.
- The mobile is IN SERVICE when a query made using the AT command "AT+CPAS" produces the output string "+CPAS: 0", followed by an "OK", and a query made using the AT command "AT+CREG" produces the output string "+CREG: x, 1" ("CREG: x, 5" in roaming), followed by an "OK".
- Description of the management of the SIM by the user:





- When the AT command "AT+CPIN?" produces the output string "+CPIN: SIM PIN", the user shall enter the PIN with the AT command "AT+CPIN="xxxx"", where xxxx is the PIN number. To enable PIN, send the AT command "AT+CLCK="SC", 1, xxxx", where xxxx is the PIN. To disable PIN, send the AT command "AT+CLCK="SC", 0, xxxx".
- If the PIN is correct, the string "OK" appears. If the PIN is not correct, the "ERROR" string appears. If +CME ERROR: <err> result code has been enabled by an "AT+CMEE=1" command, the "+CME ERROR: 11" string appears.
- If the SIM is blocked the AT command "AT+CPIN?" produces the output string "+CPIN: SIM PUK". The user shall enter the PUK with the AT command "AT+CPIN="<code>", "<newpin>", where <code> is the PUK code, and <newpin> is the (new or same) PIN code.
- After successful unlocking, the AT command "AT+CPIN?" produces the output string "+CPIN: READY".
- To store a number in the first free SIM location send the AT command "AT+CPBW=,xxxx,,yyyy", where xxxx is the phone number to be stored, and yyyy is the alphanumeric string associated with it;
- To display a number stored at the location XXX on the SIM, send the AT command "AT+CPBR=XXX".

- Speech volume can be controlled by sending the AT command "AT+CLVL=xxx", where xxx is an integer value in the range 1 (minimum) to a maximum value that can be queried using the command "AT+CLVL?".
- Local barring of outgoing calls is not supported.
- Prevention of unauthorised calls: unauthorised calls can be prevented by enabling PIN request with an "AT+CLCK="SC",1,xxxx" command, where xxxx is the PIN. To disable the PIN use the "AT+CLCK="SC",0,xxxx" command. Such calls can also be prevented by enabling FDN phonebook with an "AT+CLCK="FD",1,xxxx" command, where xxxx is the PIN2. To disable the FDN phonebook use the "AT+CLCK="FD",0,xxxx" command.
- Auto calling feature is not supported.
- MS originated NOTIFY feature is not supported.

### 3.2.1 Short message service

#### Notes:

- a) Before sending a MO SMS, the telephone must know the Service Centre Number. To enter it send the AT command "AT+CSCA=xxxx", where xxxx is the Service Centre Number.
- b) Protocol Data Unit (PDU) and text format for SMS are supported (see GSM 07.05, par. 3.2.3, AT+CMGF command).
- c) To display information about SIM SMS storage availability use the AT command "AT+CPMS?", that produces the output string "+CPMS: "SM",<used>,<total>"

where <used> is the number of messages currently stored on SIM, and <total> is the maximum number of messages that can be stored on SIM.

- To send a mobile originating short message:
  1. Enter the AT command "AT+CMGS=xxxx", where xxxx is the PDU length;
  2. Enter the PDU and then press <ctrl-Z>; to abort the operation, press <esc>.

### **Example:**

Text string: "This is the display text message to test the AT+CMGS SMS command for the GM862 PCS Model Mobile Station. It has been designed to be exactly 160 characters in length.";

Number to send SMS to: +3933512345678;

Use default Service Centre Address set with a previous "AT+CSCA" command.

PDU length: 155;

PDU ( 7 bit coded characters):

```
0011000d91933315325476f80000a7a054747a0e4acf41747419444ecfe1ec701e442fe
3e9a07679
3e0f9fcb20fa1b442fcfe9203aba0c0a5257c3e6710a9a36a7a0f1bbdd0ebbc920f35b0ea
2a3cba0
63736683819a6f72990d6abec569761934a587e9e9b7db95a483d0e139485c2ebb41e4
f23c7d7697
c920fa1b242e83caf8f098cece83623618688c0ecbc3637a593e07a5dd2076d97da6a35
d
```

- To read a mobile terminated short message in PDU format first get the list of SMS stored on SIM by issuing the AT command "AT+CMGL=4". The list is in the form of a sequence of strings "+CMGL: <index>, <status>, <length><CR><LF><pdu>". It is then possible to read the message in position <index> by issuing the AT command "AT+CMGR=<index>".
- To clear a message from memory send the AT command "AT+CMGD=<index>".
- To enable unsolicited indication of incoming short messages send the AT command "AT+CNMI=0,1". When a short message is received, a "+CMTI:"SM",xx" string is displayed, where xx is the message reference.
- The timer TC1M expires after 20 s.
- All the messages are stored in the SIM.
- A mobile originated SMS can be 160 characters long.

### **3.2.2 Cell Broadcast**

To receive the Cell Broadcast, the following commands must be issued:

AT+CSCB=1,"", "" to enable the reception of all the Cell Broadcast

AT+CNMI=2,0,2 to immediately display the message

### 3.2.3 *Supplementary services*

#### 1. Call Restriction

User's commands: AT+CLCK=<fac>,<mode>[,<passwd>[,<class>]]  
AT+CLCK=?

Execute command "AT+CLCK=<fac>,<mode>[,<passwd>[,<class>]]" is used to lock, unlock or interrogate the network facility <fac>. Password <passwd> is normally needed to do such actions.

Display of the answer: when <mode>=2 and command successful is displayed the string

"+CLCK: <status>[,<class>]"

Test command "AT+CLCK=?" returns supported facility values.

Parameters defined values:

<fac> values:

"SC" PIN

"AO" BAOC (Bar All Outgoing Calls)

"OI" BOIC (Bar Outgoing International Calls)

"OX" BOIC-exHC (Bar Outgoing International Calls except to Home Country)

"AI" BAIC (Bar All Incoming Calls)

"IR" BIC-Roam (Bar Incoming Calls when Roaming outside the home country)

"AB" All Barring services

"AG" All outGoing barring services

"AC" All inComing barring services

"FD" Enable FDN phonebook

"PN" Sim lock – Network personalisation

"PU" Sim lock – Network subset personalisation

<mode>:

0 unlock (disable)

1 lock (enable)

2 query status

<status>:

0 not active

1 active

<passwd>: string representing the password necessary to lock/unlock the required facility, e.g. PIN2 code for FDN facility

<class> is a sum of integers each representing a class of information (default 7 equals to all classes):

1 voice

2 data

4 fax

## 2. CLI

- Calling line identification presentation (CLIP)

User's commands: AT+CLIP=[<n>]  
AT+CLIP?  
AT+CLIP=?

Set command "AT+CLIP=n" enables or disables the presentation of the CLI at the TE.

Read command "AT+CLIP?" gives the status of <n>, and also triggers an interrogation of the provision status of the CLIP service (given in <m>).

Display of the answer: if transaction is successful, the string "+CLIP:n,m" is displayed.

Test command "AT+CLIP=?" returns values "n" supported by the TA.

Parameters defined values:

<n>  
0 disable  
1 enable

<m> (this parameter shows the subscriber CLIP service status in the network):

0 CLIP not provisioned  
1 CLIP provisioned  
2 unknown (e.g. no network, etc.)

- Calling line identification restriction (CLIR)

User's commands: AT +CLIR=[<n>]  
AT+CLIR?  
AT+CLIR=?

Set command "AT+CLIR=n" overrides the CLIR subscription (default is restricted or allowed) when temporary mode is provisioned as a default adjustment for all following outgoing calls.

Read command "AT+CLIR?" gives the default adjustment for all outgoing calls (given in <n>), and also triggers an interrogation of the provision status of the CLIR service (given in <m>).

Display of the answer: if transaction is successful, the string "+CLIR:n,m" is displayed.

Test command "AT+CLIR=?" returns values supported for "n" .

Parameters defined values:



<n> (sets the adjustment for outgoing calls):  
0 presentation indicator is used according to the subscription of the CLIR service  
1 CLIR invocation  
2 CLIR suppression

<m> (shows the subscriber CLIR service status in the network):  
0 CLIR not provisioned  
1 CLIR provisioned in permanent mode  
2 unknown (e.g. no network, etc.)

### 3. Unstructured Supplementary Service Data (USSD)

User's command: +CUSD = <n> [, <str>]

<n>:  
0 disable the result code presentation in the TA  
1 enable the result code presentation in the TA

<str>:  
string type USSD-string (when <str> parameter is not given, network is not interrogated):

If enabled by parameter <n> and requested by network, an unsolicited indication can be sent to DTE:

+CUSD : <m> [ , <str> , <dc> ]  
<m> 0 - no further user action required (network initiated USSD-Notify, or no further information needed after mobile initiated operation)  
1 - further user action required (network initiated USSD-Request, or further information needed after mobile initiated operation)  
2 - USSD terminated by network  
3 - other local client has responded  
4 - operation not supported  
5 - network time out

<dc>: GSM 03.38 [25] Cell Broadcast Data Coding Scheme in integer format (default 0)

Read command AT+CUSD? returns current value for <n>:

+CUSD : <n>  
<n> 0 - result code presentation disabled  
1 - result code presentation enabled

### 4. Advice of Charge (AOC) related commands

User's commands: AT+CAOC, AT+CACM, AT+CAMM, AT+CPUC

The execute command "AT+CAOC" returns the current call meter value from the ME.  
The execute command "AT+CAOC=<mode>" activates / deactivates the unsolicited indication of the Current Call Meter (CCM) information received from the network in the form "+CCCM: <ccm>".

Display of the answer: the string "+CAOC:ccm" is displayed if AOC service supported on SIM, otherwise a "+CME ERROR" string is displayed.

The read command "AT+CAOC?" returns the currently selected mode.

Test command "AT+CAOC=?" returns list of supported <mode> values.

Parameters defined values:

<mode>:

- 0 query CCM value
- 1 deactivate the unsolicited reporting of CCM value
- 2 activate the unsolicited reporting of CCM value

<ccm>: string type; three bytes of the current call meter value in hexadecimal format (e.g. "00001E" indicates decimal value 30); value is in home units and bytes are similarly coded as ACMmax value in the SIM.

The execute command "AT+CACM=<passwd>" resets the AOC related Accumulated Call Meter (ACM) value in SIM.

The read command "AT+CACM?" returns the current decimal value of ACM.

Display of the answer: the string "+CACM:ccm" is displayed if AOC service supported on SIM, otherwise a "+CME ERROR" string is displayed.

Parameters defined values:

<acm>: string type;

<passwd>: SIM PIN2.

The execute command "AT+CAMM=<acmmax>,<passwd>" sets the AOC related Accumulated Call Meter Maximum (ACMmax) value in SIM.

The read command "AT+CAMM?" returns the current decimal value of ACMmax.

Display of the answer: the string "+CAMM:acmmax" is displayed if AOC service supported on SIM, otherwise a "+CME ERROR" string is displayed.

Parameters defined values:

<acmmax>: string type;

<passwd>: SIM PIN2.

Notice that an ongoing call could be disconnected if ACMmax is exceeded. To get more information about the reason why a call has been disconnected send the AT command "AT+CEER?".

The execute command "AT+CPUC=<currency>,<ppu>,<passwd>" sets the AOC related Price per Unit and Currency Table (PUCT) value in SIM.

The read command "AT+CPUC?" returns the string indicating currency and price per unit.

Display of the answer: the string "+CPUC:currency,ppu" is displayed if AOC service supported on SIM, otherwise a "+CME ERROR" string is displayed.

Parameters defined values:

<currency>: string type; three-character currency code (e.g. "GBP", "DEM", "L. ");

<ppu>: string type; price per unit;

<passwd>: SIM PIN2.

## 5. Call Waiting (CW)

User's commands: AT+CCWA=[<n>[,<mode>[,<class>]]]

Activation, deactivation and status query are supported. Parameter <n> is used to disable/enable the presentation of an unsolicited result code +CCWA: <number>,<type>,<class>,<alpha>,<CLI validity> to the TE when call waiting service is enabled.

The command "AT+CCWA=2" returns the status.

Display of the answer: the string "+CCWA: <status>,<class>" is displayed.

Test command "AT+CCWA=?" returns list of supported "n" values.

Parameters defined values:

<n>

0 disable

1 enable

<mode> (when <mode> parameter is not given, network is not interrogated):

0 disable

1 enable

2 query status

<class> is a sum of integers each representing a class of information (default 7 equals to all classes):

1 voice

2 data

4 fax

<status>:

0 not active

1 active

<alpha>: optional string type alphanumeric representation of <number> corresponding to the entry found in phonebook

<CLI validity>:

0 CLI valid

1 CLI has been withheld by the originator.

2 CLI is not available due to interworking problems or limitations of originating network.

## 6. Call Forwarding

User's commands: AT +CCFC=<reason>,<mode>[,<number>[,<type>[,<class>[,],[time>]]]]]

AT+CCFC=?

Registration, erasure, activation, deactivation, and status query are supported.

Display of the answer: when <mode>=2 and command successful is displayed the string "+CCFC: <status>,<class>,<number>,<type>,,,<time>"

Test command "AT+CCFC=?" returns reason values supported.

Parameters defined values:

<reason>:

0 unconditional

1 mobile busy

2 no reply

3 not reachable

4 all call forwarding

5 all conditional call forwarding

<mode>:

0 disable

1 enable

2 query status

3 registration

4 erasure

<number>: string type phone number of forwarding address in format specified by <type>

<type>: type of address octet in integer format

<class> is a sum of integers each representing a class of information (default 7 equals to all classes):

1 voice





2 data  
4 fax

<time>:

1...30 when "no reply" is enabled or queried, this gives the time in seconds to wait before call is forwarded, default value 20

<status>:

0 not active  
1 active

## 7. Call hold

User's commands: AT +CHLD=<n>

AT+CHLD=?

This refers to a service that allows a call to be temporarily disconnected from the ME but the connection to be retained by the network. Calls can be put on hold, recovered, and released (with ATH command). Call Hold is only applicable to voice calls; it handles no more than two calls at a time.

Test command "AT+CHLD=?" returns a list of supported "n" values..

Parameters defined values:

<n>:

- 1 releases all active calls (if any exist) and accepts a waiting call
- 2 places all active calls (if any exist) on hold and accepts a waiting call, or swaps between an active and a held call

- 8. Explicit Call Transfer (ECT): not currently supported
- 9. Call Completion (CCBS, CCNRy): not currently supported

## 10. Closed User Group (CUG)

User's commands: AT+CCUG=<n>[, <index>[,<info>]]

Enable/disable the CUG supplementary service

Parameters:

<n>

- 0 - disables the temporary CUG settings for all the successive calls
- 1 - enables the temporary CUG settings for all the successive calls

<index>

- 0...9 - CUG index
- 10 - no index (preferential CUG taken from subscriber data)



<info>

- 0 - no information
- 1 - suppress Outgoing Access (OA)
- 2 - suppress preferential CUG
- 3 - suppress OA and preferential CUG

- 11. Enhance Multi-Level Precedence and Pre-emption (eMLPP): not currently supported
  - 12. Call Deflection (CD): not currently supported
  - 13. Call Transfer (CTFR): not currently supported
  - 14. User-to-User Signaling (UUS): not currently supported
  - 15. Multiple Subscriber Profile (MSP): not currently supported
- Support of Private Numbering Plan (SPNP) : not currently supported.

### 3.3 *Electrical Man Machine Interface (EMMI)*

Not supported.

### 3.4 *Digital Audio Interface (DAI)*

The DAI interface is not implemented.

### 3.5 *Characteristics related to bearer services or teleservices*

#### 3.5.1 *Access interface*

The MT physical interface to the TE is a nine-wire EIA RS-232C (CCITT Recommendation V.24/V.28) asynchronous interface (RXD, TXD, CTS, RTS, DCD, RI, DSR, DTR, GND). The MT logical interface emulates the behaviour of an analog modem through a set of "AT" commands. In addition, MT implements a subset of GSM 07.07, GSM 07.05 and V.25ter commands.

#### 3.5.2 *Configuration of the MT*

The MT can be configured using the basic "AT" commands or the extended GSM 07.07 commands. The DTE baud rate and format are automatically detected by MT when the "AT" sequence is entered (Autobaud): supported rates are 1200, 2400, 4800, 9600, 19200, 38400, 57600 and 115200 bps, with all possible configurations of data formats. 300 and 600 is supported only as fix rate, by means of +IPR command.

The line speed is set through the command 'AT+CBST' with this syntax:

AT+CBST=[<speed>[,<name>[,<ce>]]]

<speed>:

- 0 autobauding (automatic selection of the speed)
- 1 300 bps (V.21)
- 2 1200 bps (V.22)



3 1200/75 bps (V.23)  
4 2400 bps (V.22bis)  
6 4800 bps (V.32)  
7 9600 bps (V.32)  
14 14400 bps (V.34)

<name>:

0 asynchronous modem

<ce>:

0 transparent

1 non-transparent

AT+CRLP is used if you need to change the default RLP negotiation parameters.

AT+CRLP: <iws>,<mws>,<T1>,<N2>

where

<iws>: IWF to MS window size (default 61)

<mws>: MS to IWF window size (default 61)

<T1> : acknowledgement timer T1 (default 48)

<N2>: retransmission attempts N2 (default 6) in integer format

AT&V command can be used to display the current settings.

### 3.5.3 Bearer capabilities

Bearer Capabilities are set with command AT+CBST (see par. 3.5.2 for syntax).

The following conventions are adopted:

1. If AT+CBST=...,...,0 command is given, a transparent data call is assumed. If AT+CBST=...,...,1 command is given, a non transparent (RLP) data call is assumed.

### 3.5.4 Data call set-up and data call clearing

Data call establishment for all implemented data services can be only initiated by MT with an ATD command in the same way you do using analog modems:

#### 1) Mobile originated

AT+CBST=...,...,... to configure MT;

ATD<number><CR> to dial a number.

When the Data call is successful the "CONNECT xxxx" indication is provided (xxxx = line speed).

If MT is not ready, a "NO DIALTONE" indication is provided from MT to TE.

In case of a wrong number, an "ERROR" indication is provided from MT to TE.

If called party is busy, a "BUSY" indication is provided from MT to TE.

If call is aborted, a “**NO CARRIER**” indication is provided from MT to TE.

## 2) Mobile terminated

MT signals incoming call sending the indication “RING”; if automatic answer is disabled (ATS0=0), the incoming call can be answered issuing an ATA command.

When the data connection is established, “CONNECT xxxx” indication is sent; otherwise a “NO CARRIER” message will be sent to the DTE.

Data call clearing for all implemented data services can be accomplished during the handshake phase by sending any character to the MT; in this case, the call is aborted and a “NO CARRIER” indication is returned.

In order to clear an established data connection it is possible to put the DCE in command mode with an escape sequence (+++) and then issue an ATH command. When call has been cleared, an “OK” indication is provided to TE from MT.

If the disconnection is initiated by the called remote party, it will be detected through C109 loss in V110 frames (in case of a transparent connection), or by reception of a DISC frame (in case of an RLP connection), or monitoring C109 status inside I+S frames. When a remote disconnection is detected, MT sends the “NO CARRIER” indication.

### 3.5.5 Characteristics of non-transparent data services

Both SREJ command and I and S frames management are implemented.

Software and hardware flow control is supported: it can be selected through AT&K commands:

- AT&K0 = disables flow control
- AT&K1 = CTS (HW monodirectional)
- AT&K2 = XON/XOFF (SW monodirectional)
- AT&K3 = RTS/CTS (HW bi-directional)
- AT&K4 = XON/XOFF (SW bi-directional)

### 3.6 International mobile station equipment identity

See label on the MS under test.

### 3.7 Intermediate frequencies

- Direct conversion in GSM, DCS and PCS Rx.
- Direct up conversion in GSM, DCS and PCS Tx.
- The variable oscillator frequency is 2 times higher the DCS/PCS bands = 3.6 GHz.
- The variable oscillator frequency is 4 times higher the GSM band = 3.6 GHz.

### Network Table

Here are listed the GSM PLMNs memorised in the MS with their MCC-MNC.

Network Name	MCC	MNC
GR PANAFON	202	05
GR COSMOTEL	202	01
GR TELESTET	202	10
NL LIBERTEL	204	04
NL KPN	204	08
NL TELFORT	204	12
Ben NL	204	16
NL dutchtone	204	20
BEL PROXIMUS	206	01
B mobistar	206	10
B - Orange	206	20
F Itineris	208	01
F SFR	208	10
F - BYTEL	208	20
STA-MOBILAND	213	03
AIRTEL	214	01
MOVISTAR	214	07
AMENA	214	03
H PANNON GSM	216	01
H-WESTEL 900	216	30
PTT-GSM BIH	218	90
HR - CRONET	219	01
HR VIP	219	10
YU MOBTEL	220	01
I TIM	222	01
I-OMNITEL	222	10
I-WIND	222	88
I Blu	222	98
RO CONNEX	226	01
RO dialog	226	10
SWISS GSM	228	01
DiAx Swiss	228	02
Orange CH	228	03
PAEGAS-CZ	230	01
EUROTEL - CZ	230	02
SVK GT	231	01
EUROTEL-SK	231	02
A1	232	01



A max.	232	03
A one	232	05
UK CELLNET	234	10
UK VODAFONE	234	15
UK ONE 2 ONE	234	30
UK ORANGE	234	33
UK JT GSM	234	50
UK GSY-TEL	234	55
UK MANX	234	58
DK TDK-MOBIL	238	01
DK SONOFON	238	02
TELIA DK	238	20
DK mobilix	238	30
TELIA S	240	01
S COMVIQ	240	07
S EURO	240	08
N Telenor	242	01
N NetCom GSM	242	02
FI RL	244	05
FI TELIA	244	03
FI FINNET	244	09
FI SONERA	244	91
OMNITEL LT	246	01
LT BITE GSM	246	02
LV LMT GSM	247	01
LV BALTCOM	247	02
EE EMT GSM	248	01
EE RLE	248	02
EE Q GSM	248	03
MTS-RUS	250	01
NW GSM - RUS	250	02
SCS RUS	250	05
Far East RUS	250	12
RUS KUBANGSM	250	13
EXTEL RUS	250	28
RUS Uraltel	250	39
RUS NC-GSM	250	44
RUS BMT	250	07
RUS SMARTS	250	07
RUS BEE L	250	99
UA UMC	255	01
FLASH-UKR	255	02
UA-KYIVSTAR	255	03
UA - GT-BCS	255	05
MD VOXTEL	259	01

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PL-PLUS	260	01
PL-ERA GSM	260	02
PL IDEA	260	03
D1-TELEKOM	262	01
D2	262	02
D E-Plus	262	03
D Interkom	262	07
GIBTEL GSM	266	01
P TELECEL	268	01
P TMN	268	06
P OPTIMUS	268	03
L LUXGSM	270	01
L TANGO	270	77
IRL Eircell	272	01
IRL DIGIFONE	272	02
IS SIMINN	274	01
IS TAL	274	02
A M C - AL	276	01
VODAFONE MLA	278	01
CY CYTAGSM	280	01
GEO GEOCELL	282	01
GEO MAGTI	282	02
RA-ARMGSM	283	01
M-TEL GSM BG	284	01
TR TURKCELL	286	01
TR TELSIM	286	02
SI.MOBIL	293	40
SI-GSM	293	41
MKD-MOBIMAK	294	01
F AMERIS	340	01
AZE - ACELL	400	01
AZE-BAKCELL	400	02
KZ K-MOBILE	401	01
INA ESSARH	404	01
INA - TATA	404	07
INA-AIRTL	404	10
INA ESSAR	404	11
INA-ESCOTEL	404	12
MODICOM INA	404	14
INA ESSARU	404	15
INA MaxTouch	404	20
BPL MOBILE	404	21
BPL MOBILE	404	27
INA COMMAND	404	30
INA RPG	404	41

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INA AIRCEL	404	42
BPL MOBILE	404	43
BPL MOBILE	404	46
INA ESSARR	404	60
SRI DIALOG	413	02
RL Cellis	415	01
RL LibanCell	415	03
JOR Fastlink	416	01
SYR MOBILE	417	09
KT MTCNet	419	02
ALJAWWAL	420	01
EAE-ALJAWWAL	420	07
OMAN MOBILE	422	02
UAE ETISALAT	424	02
IL ORANGE	425	01
BHR - M.PLUS	426	01
QAT-QATARNET	427	01
UZB DW-GSM	434	04
COSCOM	434	05
BITEL KGZ	437	01
VN Mobi Fone	452	01
HK TELECOM (*)	454	00
HK Orange (*)	454	04
HK SMARTONE (*)	454	06
HK NEW WORLD (*)	454	10
HK PEOPLES (*)	454	12
HK SUNDAY (*)	454	16
MAC-CTMGSM	455	01
MOBITEL-KHM	456	01
KHM-SM	456	02
China Mobile (*)	460	00
China Unicom (*)	460	01
Far EasTone (*)	466	01
TWN Tuntex (*)	466	06
KGT-Online (*)	466	88
ROC LDTA GSM (*)	466	92
TWN MOBITAI (*)	466	93
TWN PCC (*)	466	97
TWN TA-GSM (*)	466	99
BGD-GP	470	01
BD Sheba	470	03
MY maxis	502	12
MY EMARTEL	502	13
MY DIGI 1800	502	16
MY-ADAM 017	502	17

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MY CELCOM	502	19
AUS M-NET	505	01
AUS OPTUS	505	02
AUS VODAFONE	505	03
AUS One.Tel	505	08
IND SAT-C	510	01
IND T-SEL	510	10
IND GSM-XL	510	11
ISLACOM	515	01
PH - GLOBE	515	02
PH SMART	515	03
TH AIS GSM	520	01
TH WCS	520	10
TH-HELLO	520	23
ST-GSM-SGP	525	01
M1-GSM-SGP	525	03
GSM1800-SGP	525	02
STARHUB-SGP	525	05
BRU-DSTCom	528	11
VODAFONE NZ	530	01
VODAFONE FIJ	542	01
NCL MOBILIS	546	01
F-VINI	547	20
EGY MobiNiL	602	01
EGY CLICK	602	02
ALG - AMN	603	01
MOR IAM	604	01
SN ALIZE	608	01
GN LAGUI	611	02
CI Ivoiris	612	03
TELECEL-CI	612	05
TG-TOGO CELL	615	01
CELLPLUS-MRU	617	01
LBR OMEGA	618	01
GH SPACEFON	620	01
CAM CELLNET	624	01
CPV MOVEL	625	01
SEZ CELLULAR	633	01
SEZ AIRTEL	633	10
SDN MobiTel	634	01
RW-CELL	635	10
ETH-MTN	636	01
Tritel - TZ	640	01
MTN-UGANDA	641	10
UG CeITel	641	01

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DAI TELECOM

Dai Telecom Group

## TECHNICAL NOTE

Code: 30264NT10665A  
Proj. nr: 0264  
Rel.: 0  
Date: 2004-06-04

MDG-ANTARIS	642	02
MOZ-mCel	643	01
SFR REUNION	647	10
ZW NET*ONE	648	01
TELECEL ZW	648	03
MW CP 900	650	01
VCL COMMS	651	01
VodaCom-SA	655	01
MTN-SA	655	10
INFONET-VZ	734	01
Test 001-01	001	01

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**Table A.1: Types of Mobile Stations**

Item	Type of Mobile Station	Ref.	Status	Support	Mnemonic
1	Standard GSM Band (P-GSM)	GSM 05.05, 2 3GPP TS 45.005, 2	O.101	Y	TSPC_Type_GSM_P_Band
2	Extended GSM Band (E-GSM), (including standard Band)	GSM 05.05, 2 3GPP TS 45.005, 2	O.101	Y	TSPC_Type_GSM_E_Band
3	R-GSM Band (including standard and E-GSM Band)	GSM 05.05, 2 3GPP TS 45.005, 2	O.101	N	TSPC_Type_GSM_R_Band
4	DCS-1800	GSM 05.05 3GPP TS 45.005, 2	O.101	Y	TSPC_Type_DCS_Band
5	Multiple-band, not Simultaneously	GSM 05.05 3GPP TS 45.005, 2	O.102	N	TSPC_Type_MB_NonSimul
6	Multiple-band Simultaneously	GSM 05.05 3GPP TS 45.005, 2	O.102	Y	TSPC_Type_MB_Simul
7	Small Mobile Station	GSM 05.05 1.1 3GPP TS 45.005, 1.1	O	Y	TSPC_Type_SmallMS
8	GSM Power Class 2	GSM 05.05,4.1.2 GPP TS 45.005, 4.1.1	C101	N	TSPC_Type_GSM_Class2
9	GSM Power Class 3	GSM 05.05,4.1.2 GPP TS 45.005, 4.1.1	C101	N	TSPC_Type_GSM_CIAss3
10	GSM Power Class 4	GSM 05.05,4.1.2 GPP TS 45.005, 4.1.1	O	Y	TSPC_Type_GSM_CIAss4
11	GSM Power Class 5	GSM 05.05,4.1.2 GPP TS 45.005, 4.1.1	O	N	TSPC_Type_GSM_CIAss5
12	DCS Power Class 1	GSM 05.05,4.1.2 GPP TS 45.005, 4.1.1	O	Y	TSPC_Type_DCS_Class1
13	DCS Power Class 2	GSM 05.05,4.1.2 GPP TS 45.005, 4.1.1	O	N	TSPC_Type_DCS_Class2
14	DCS Power Class 3	GSM 05.05,4.1.2 GPP TS 45.005, 4.1.1	O	N	TSPC_Type_DCS_Class3
15	HSCSD Multislot MS	GSM 05.02,B.1 3GPP TS 45.002, B.1	C102	N	TSPC_Type_HSCSD_Multislot
16	GSM 450 band	GSM 05.05, 2 3GPP TS45.005, 2	O.101	N	TSPC_Type_GSM_450_Band
17	GSM 480 band	GSM 05.05, 2 3GPP TS 45.005, 2	O.101	N	TSPC_Type_GSM_480_Band
18	PCS 1900 band	GSM 05.05, 2 3GPP TS 45.005, 2	O.101	Y	TSPC_Type_PCS_Band
19	PCS Power Class 1	GSM 05.05, 4 3GPP TS 45.005, 4	O	Y	TSPC_Type_PCS_Class1
20	PCS Power Class 2	GSM 05.05, 4 3GPP TS 45.005, 4	O	N	TSPC_Type_PCS_Class2
21	PCS Power Class 3	GSM 05.05, 4 3GPP TS 45.005, 4	O	N	TSPC_Type_PCS_Class3
22	Multislot Class 1	GSM 05.02, B.1 3GPP TS 45.002, B.1	O	Y	TSPC_Type_Multislot_Class1
23	Multislot Class 2	GSM 05.02, B.1 3GPP TS 45.002, B.1	O	Y	TSPC_Type_Multislot_Class2
24	Multislot Class 3	GSM 05.02, B.1 3GPP TS 45.002, B.1	O	Y	TSPC_Type_Multislot_Class3
25	Multislot Class 4	GSM 05.02, B.1 3GPP TS 45.002, B.1	O	Y	TSPC_Type_Multislot_Class4
26	Multislot Class 5	GSM 05.02, B.1 3GPP TS 45.002, B.1	O	Y	TSPC_Type_Multislot_Class5
27	Multislot Class 6	GSM 05.02, B.1 3GPP TS 45.002, B.1	O	Y	TSPC_Type_Multislot_Class6
28	Multislot Class 7	GSM 05.02, B.1 3GPP TS 45.002, B.1	O	N	TSPC_Type_Multislot_Class7
29	Multislot Class 8	GSM 05.02, B.1 3GPP TS 45.002, B.1	O	Y	TSPC_Type_Multislot_Class8

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30	Multislot Class 9	GSM 05.02, B.1 3GPP TS 45.002, B.1	O	Y	TSPC_Type_Multislot_Class9
31	Multislot Class 10	GSM 05.02, B.1 3GPP TS 45.002, B.1	O	Y	TSPC_Type_Multislot_Class10
32	Multislot Class 11	GSM 05.02, B.1 3GPP TS 45.002, B.1	O	N	TSPC_Type_Multislot_Class11
33	Multislot Class 12	GSM 05.02, B.1 3GPP TS 45.002, B.1	O	N	TSPC_Type_Multislot_Class12
34	Multislot Class 13	GSM 05.02, B.1 3GPP TS 45.002, B.1	O	N	TSPC_Type_Multislot_Class13
35	Multislot Class 14	GSM 05.02, B.1 3GPP TS 45.002, B.1	O	N	TSPC_Type_Multislot_Class14
36	Multislot Class 15	GSM 05.02, B.1 3GPP TS 45.002, B.1	O	N	TSPC_Type_Multislot_Class15
37	Multislot Class 16	GSM 05.02, B.1 3GPP TS 45.002, B.1	O	N	TSPC_Type_Multislot_Class16
38	Multislot Class 17	GSM 05.02, B.1 3GPP TS 45.002, B.1	O	N	TSPC_Type_Multislot_Class17
39	Multislot Class 18	GSM 05.02, B.1 3GPP TS 45.002, B.1	O	N	TSPC_Type_Multislot_Class18
40	Multislot Class 19	GSM 05.02, B.1 3GPP TS 45.002, B.1	O	N	TSPC_Type_Multislot_Class19
41	Multislot Class 20	GSM 05.02, B.1 3GPP TS 45.002, B.1	O	N	TSPC_Type_Multislot_Class20
42	Multislot Class 21	GSM 05.02, B.1 3GPP TS 45.002, B.1	O	N	TSPC_Type_Multislot_Class21
43	Multislot Class 22	GSM 05.02, B.1 3GPP TS 45.002, B.1	O	N	TSPC_Type_Multislot_Class22
44	Multislot Class 23	GSM 05.02, B.1 3GPP TS 45.002, B.1	O	N	TSPC_Type_Multislot_Class23
45	Multislot Class 24	GSM 05.02, B.1 3GPP TS 45.002, B.1	O	N	TSPC_Type_Multislot_Class24
46	Multislot Class 25	GSM 05.02, B.1 3GPP TS 45.002, B.1	O	N	TSPC_Type_Multislot_Class25
47	Multislot Class 26	GSM 05.02, B.1 3GPP TS 45.002, B.1	O	N	TSPC_Type_Multislot_Class26
48	Multislot Class 27	GSM 05.02, B.1 3GPP TS 45.002, B.1	O	N	TSPC_Type_Multislot_Class27
49	Multislot Class 28	GSM 05.02, B.1 3GPP TS 45.002, B.1	O	N	TSPC_Type_Multislot_Class28
50	Multislot Class 29	GSM 05.02, B.1 3GPP TS 45.002, B.1	O	N	TSPC_Type_Multislot_Class29
51	GPRS Multislot operation	GSM 02.60 3GPP TS 22.060	C103	Y	TSPC_Type_GPRS_Multislot_operation
52	EGPRS Multislot operation	GSM 02.60 3GPP TS 22.060	C104	N	TSPC_Type_EGPRS_Multislot_operation
53	GSM 700 band	3GPP TS 45.005, 2	O.101	N	TSPC_Type_GSM_700_Band
54	GSM 750 band	3GPP TS 45.005, 2	O.101	N	TSPC_Type_GSM_750_Band
55	GSM 850 band	GSM 05.05, 2 3GPP TS 45.005, 2	O.101	N	TSPC_Type_GSM_850_Band
56	Support of UTRAN Radio Access Technology	3GPP TS 25.301	O	N	TSPC_Type_UTRAN
57	Support of GPRS Multislot class on the uplink	GSM 05.02, B.1 3GPP TS 45.002, B.1	C105	Y	TSPC_Type_GPRS_Multislot_uplink
58	Support of COMPACT	GSM 05.08 3GPP TS 45.008	O	N	TSPC_COMPACT
59	DTM Multislot Class 1	3GPP TS 05.02, 6.4 3GPP TS 45.002, 6.4	C106	N	TSPC_DTM_Multislot_Class_1
60	DTM Multislot Class 5	3GPP TS 05.02, 6.4 3GPP TS 45.002, 6.4	C107	N	TSPC_DTM_Multislot_Class_5

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61	DTM Multislot Class 9	3GPP TS 05.02, 6.4 3GPP TS 45.002, 6.4	C108	N	TSPC_DTM_Multislot_Class_9
62	Support of dynamic allocation in DTM	3GPP TS 24.008 10.5.1.7	C108	N	TSPC_DTM_Dynamic_Allocation
63	Support of UTRAN FDD	3GPP TS 25.301	O	N	TSPC_Type_UTRAN_FDD
64	Support of UTRAN TDD	3GPP TS 25.301	O	N	TSPC_Type_UTRAN_TDD

**Table A.1b: MS Feature Release Supported**

Item	MS Feature Release Supported	Reference	Status	Support	Mnemonic	Value	
						Allowed	Supported
1	Release of GPRS supported.	3GPP TS 02.60 3GPP TS 22.060	C1b01	Y	TSPC_MS_GPRS_RELEASE	R97, R98, R99, Release 4, Release 5	<b>R98</b>
2	Release of AMR supported.	3GPP TS 05.09, 3.4	C1b02	N	TSPC_MS_AMR_RELEASE	R98, R99, Release 4, Release 5	
3	Release of EGPRS supported.	3GPP TS 02.60 3GPP TS 22.060	C1b03	N	TSPC_MS_EGPRS_RELEASE	R99, Release 4, Release 5	

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Table A.2: Mobile Station Features

Item	Mobile Station Feature	Ref.	Status	Support	Mnemonic
1	Display of Called Number	GSM 02.07 B.1.1	C202	N	TSPC_Feat_DCN
2	Indication of Call Progress Signals	GSM 02.07 B.1.2	C204	N	TSPC_Feat_CPSind
3	Country / PLMN Indication	GSM 02.07 B.1.3	C202	N	TSPC_Feat_PLMNind
4	Country / PLMN Selection	GSM 02.07 B.1.4	M	Y	TSPC_Feat_PLMNsel
5	Keypad	GSM 02.07 B.1.5	O	N	TSPC_Feat_Keypad
6	IMEI	GSM 02.07 B.1.6	M	Y	TSPC_Feat_IMEI
7	Short Message Overflow Indication	GSM 02.07 B.1.8	M	Y	TSPC_Feat_SMoverflow
8	DTE /DCE Interface	GSM 02.07 B.1.9	O	Y	TSPC_Feat_DTE_DCE
9	ISDN 'S' Interface	GSM 02.07 B.1.10	O	N	TSPC_Feat_Sinterface
10	International Access Function	GSM 02.07 B.11	O	Y	TSPC_Feat_IntAccess
11	Service Indicator	GSM 02.07 B.1.12	C203	Y	TSPC_Feat_ServInd
12	Autocalling restriction capabilities	GSM 02.07 Annex A	C205	N	TSPC_Feat_AutocallRestrict
13	Dual Tone Multi Frequency function	GSM 02.07 B.1.15	C201	Y	TSPC_Feat_DTMF
14	Subscription Identity Management	GSM 02.07 B.1.16	M	Y	TSPC_Feat_SIM
15	On / Off switch	GSM 02.07 B.1.17	O	Y	TSPC_Feat_OnOff
16	Subaddress	GSM 02.07 B.1.18	O	N	TSPC_Feat_Subaddress
17	Support of Encryption A5/1	GSM 02.07 B.1.19	M	Y	TSPC_Feat_A51
18	Support of Encryption A5/2	GSM 02.07 B.1.19	M	Y	TSPC_Feat_A52
19	Short Message Service Cell Broadcast DRX	GSM 02.07 B.1.20	O	Y	TSPC_Feat_SMS_CB_DRX
20	Abbreviated Dialling	GSM 02.07 B.3.1	O	Y	TSPC_Feat_AD
21	Fixed Number Dialling	GSM 02.07 B.3.2	O	Y	TSPC_Feat_FND
22	Barring of Outgoing Calls	GSM 02.07 B.3.3	O	Y	TSPC_Feat_BO
23	DTMF Control Digits Separator	GSM 02.07 B.3.4	O	N	TSPC_Feat_DTMF_CDS
24	Selection of Directory No in Short Messages	GSM 02.07 B.3.5	O	Y	TSPC_Feat_SM_Dir
25	Last Numbers Dialed	GSM 02.07 B.3.6	O	Y	TSPC_Feat_LND
26	At least one autocalling feature	GSM 02.07 2	O	N	TSPC_Feat_Autocall
27	Alphanumeric display	GSM 02.07 2	O	N	TSPC_Feat_Alphanum_Display
28	Other means of display.	GSM 02.07 2	O	Y	TSPC_Feat_Other_Means_of_Display
29	Speech indicator.	GSM 02.07 2	O	N	TSPC_Feat_Speech_Indicator
30	Support of the extended Short message cell broadcast channel	GSM 02.07 B.1.24	O	N	TSPC_Ext_SMcell_BC
31	Support of Additional Call Set-up MMI Procedures	GSM 02.07 B.1.23	O	Y	TSPC_AddCall_Su_MMi_Proc
32	Network Identity and Timezone	GSM 02.07 B.1.25	O	N	TSPC_Feat_NID_Time zone
33	Ciphering Indicator	GSM 02.07 B.1.22(B.1.2.26)	C202	N	TSPC_Feat_Ciphering
34	Network's indication of alerting in the MS \$(NI Alert in MS)\$	GSM 02.07 B.1.27	O	N	TSPC_Feat_NI_AlertinMS
35	ME-SIM lock	GSM 02.07 B.3.7	O	N	TSPC_SIM_Lock
36	Service Dialling Numbers	GSM 02.07 B.3.8	O	N	TSPC_Service_No
37	Extended timing advance	GSM 05.10, 5.5	C206	N	TSPC_Feat_Ext_TA
38	Support of SoLSA	GSM 02.43, 3GPP TS 22.043 B.1.27 GSM 03.73 3GPP TS 23.073	O	N	TSPC_SoLSA



39	Audible Indication of Service Tones	GSM 02.07, B.1.27	O	Y	TSPC_Feat_audible_tone
40	Autocalling_Cause 27 Implemented in Cat 3	GSM 02.07 annex A	O	N	TSPC_Feat_Cause27Cat3
41	Support of GPRS	GSM 02.60 3GPP TS 22.060	C211	Y	TSPC_GPRS
42	Support of EGPRS	GSM 02.60 3GPP TS 22.060	C212	N	TSPC_EGPRS
43	Support of GPRS Encryption	GSM 02.60 3GPP TS 22.060	C207	Y	TSPC_GPRS_Encryp
44	Control of Supplementary Services	GSM 02.07, 2	O	Y	TSPC_Control_SS
45	Short message	GSM 02.07, 2	M	Y	TSPC_Supp_SM
46	Emergency calls capabilities	GSM 02.07, B.1.14	C211	Y	TSPC_Emergency_call_cap
47	GPRS operation mode class A	GSM 02.60, 5.4.5 3GPP TS 22.060, 5.4.5	C209	N	TSPC_operation_mode_A
48	GPRS operation mode class B	GSM 02.60, 5.4.5 3GPP TS 22.060, 5.4.5	C209	Y	TSPC_operation_mode_B
49	GPRS operation mode class C	GSM 02.60, 5.4.5 3GPP TS 22.060, 5.4.5	C209	N	TSPC_operation_mode_C
50	MS supporting SMS over GPRS	3GPP TS 22.060, 5.4	O	N	TSPC_SMS_over_GPRS
51	MS in GPRS operation mode C and afterwards switch to MS GPRS operation mode B	3GPP TS 22.060, 6.1	O	N	TSPC_Feat_operation_mode_C_to_operation_mode_B
52	Support of GSM-CTS	GSM 05.08 11 3GPP TS 45.008, 11	O	N	TSPC_GSM_CTS
53	Support of ECSD	GSM 05.08, B.6 3GPP TS 45.008, B.6	O	N	TSPC_GSM_ECSD
54	GPRS test mode A	GSM 04.14 5.4	C208	Y	TSPC_GPRS_Testmode_A
55	GPRS test mode B	GSM 04.14 5.4	C208	Y	TSPC_GPRS_Testmode_B
56	EGPRS test mode	GSM 04.14	C210	N	TSPC_EGPRS_Testmode
57	Support of MS-Assisted E-OTD	3GPP TS 03.71 7.6.1	O	N	TSPC_EOTD_ASSIST
58	Non-zero value of Non_DRX_Timer	3GPP TS 04.60	C208	N	TSPC_non_zero_Non_DRX_Timer
59	Support of MS-Based GPS	3GPP TS 03.71 7.6.1	O	N	TSPC_A-GPS_Based
60	Support of MS-Assisted GPS	3GPP TS 03.71 7.6.1	O	N	TSPC_A-GPS_Assist
61	Privacy Option Supported	3GPP TS 03.71 7.6.1	O	N	TSPC_PRIVACY
62	Support of DTM	3GPP TS 24.008 10.5.1.7	O	N	TSPC_DTM
63	Support MS Assisted EOTD Performance for GMSK	3GPP TS 05.05 Annex I	O	N	TSPC_EOTD_ASSIST AND TSPC_PERF_GMSK
64	Support MS Assisted EOTD Performance for 8PSK	3GPP TS 05.05 Annex I	O	N	TSPC_EOTD_ASSIST AND TSPC_PERF_8PSK
65	Support of EGPRS Packet Access enhancement	3GPP TS 04.18 3.5.2.1.2 3GPP TS 04.60 7.1.2.1	O	N	TSPC_EGPRS_ENHANC
66	Support of Network Assisted Cell Change	3GPP TS 24.008 10.5.1.7, 10.5.5.12a	O	N	TSPC_NACC

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**Table A.3: Teleservices**

Item	Teleservice	Ref.	Status	Support	Mnemonic
1	Telephony	GSM 02.03 A.1.1 3GPP TS 22.003, A.1.1	O	Y	TSPC_Serv_TS11
2	Emergency Call	GSM 02.03 A.1.2 3GPP TS 22.003, A.1.2	C301	Y	TSPC_Serv_TS12
3	Short Message MT/PP	GSM 02.03 A.1.3.1 3GPP TS 22.003, A.1.3.1	O	Y	TSPC_Serv_TS21
4	Short Message MO/PP	GSM 02.03 A.1.3.2 3GPP TS 22.003, A.1.3.2	O	Y	TSPC_Serv_TS22
5	SMS Cell Broadcast	GSM 02.03 A.1.3.3 3GPP TS 22.003, A.1.3.3	O	Y	TSPC_Serv_TS23
6	Teleservice Alternate Speech and G3 fax	GSM 02.03 A.1.4 3GPP TS 22.003, A.1.4	O	N	TSPC_Serv_TS61
7	Teleservice Automatic G3 fax	GSM 02.03 A.1.5 3GPP TS 22.003, A.1.5	O	Y	TSPC_Serv_TS62
8	Voice Group Call Service (VGCS)	GSM 02.03 A.1.6 3GPP TS 22.003, A.1.6	O	N	TSPC_Serv_TS91
9	Voice Broadcast Service (VBS)	GSM 02.03 A.1.7 3GPP TS 22.003, A.1.7	O	N	TSPC_Serv_TS92
10	SMS description	GSM 02.03 A.1.3.4 3GPP TS 22.003, A.1.3.4	O	Y	TSPC_SMS_description

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**Table A.4: Bearer Services**

Item	Bearer Service	Ref.	Status	Support	Mnemonic
1	Data circuit duplex async. 300 bit/s	GSM 02.02 3 3GPP TS 22.002, 3	O	Y	TSPC_Serv_BS21
2	Data circuit duplex async. 1200 bit/s	GSM 02.02 3 3GPP TS 22.002, 3	O	Y	TSPC_Serv_BS22
3	Data circuit duplex async. 1200/75 bit/s	GSM 02.02 3 3GPP TS 22.002, 3	O	Y	TSPC_Serv_BS23
4	Data circuit duplex async. 2400 bit/s	GSM 02.02 3 3GPP TS 22.002, 3	O	Y	TSPC_Serv_BS24
5	Data circuit duplex async. 4800 bit/s	GSM 02.02 3 3GPP TS 22.002, 3	O	Y	TSPC_Serv_BS25
6	Data circuit duplex async. 9600 bit/s	GSM 02.02 3 3GPP TS 22.002, 3	O	Y	TSPC_Serv_BS26
7	Data circuit duplex sync. 1200 bit/s	GSM 02.02 3 3GPP TS 22.002, 3	O	N	TSPC_Serv_BS31
8	Data circuit duplex sync. 2400 bit/s	GSM 02.02 3 3GPP TS 22.002, 3	O	N	TSPC_Serv_BS32
9	Data circuit duplex sync. 4800 bit/s	GSM 02.02 3 3GPP TS 22.002, 3	O	N	TSPC_Serv_BS33
10	Data circuit duplex sync. 9600 bit/s	GSM 02.02 3 3GPP TS 22.002, 3	O	N	TSPC_Serv_BS34
11	PAD Access 300 bit/s	GSM 02.02 3 3GPP TS 22.002, 3	O	N	TSPC_Serv_BS41
12	PAD Access 1200 bit/s	GSM 02.02 3 3GPP TS 22.002, 3	O	N	TSPC_Serv_BS42
13	PAD Access 1200/75 bits/s	GSM 02.02 3 3GPP TS 22.002, 3	O	N	TSPC_Serv_BS43
14	PAD Access 2400 bit/s	GSM 02.02 3 3GPP TS 22.002, 3	O	N	TSPC_Serv_BS44
15	PAD Access 4800 bit/s	GSM 02.02 3 3GPP TS 22.002, 3	O	N	TSPC_Serv_BS45
16	PAD Access 9600 bit/s	GSM 02.02 3 3GPP TS 22.002, 3	O	N	TSPC_Serv_BS46
17	Packet Access 2400 bit/s	GSM 02.02 3 3GPP TS 22.002, 3	O	N	TSPC_Serv_BS51
18	Packet Access 4800 bit/s	GSM 02.02 3 3GPP TS 22.002, 3	O	N	TSPC_Serv_BS52
19	Packet Access 9600 bit/s	GSM 02.02 3 3GPP TS 22.002, 3	O	N	TSPC_Serv_BS53
20	Alternate Speech/Data	GSM 02.02 3 3GPP TS 22.002, 3	O	N	TSPC_Serv_BS61
21	Speech Followed by Data	GSM 02.02 3 3GPP TS 22.002, 3	O	N	TSPC_Serv_BS81
22	GPRS	GSM 02.02 3 3GPP TS 22.002, 3	O	Y	TSPC_Serv_BS70

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Table A.5: Supplementary services

Item	Supplementary Service	Ref.	Status	Support	Mnemonic
1	Calling Line Identification Presentation	GSM 02.04 4 3GPP TS 22.004, 4	O	Y	TSPC_Serv_SS_CLIP
2	Calling Line Identification Restriction	GSM 02.04 4 3GPP TS 22.004, 4	O	Y	TSPC_Serv_SS_CLIR
3	Connected Line Identification Presentation	GSM 02.04 4 3GPP TS 22.004, 4	O	N	TSPC_Serv_SS_COLP
4	Connected Line Identification Restriction	GSM 02.04 4 3GPP TS 22.004, 4	O	N	TSPC_Serv_SS_COLR
5	Call Forwarding Unconditional	GSM 02.04 4 3GPP TS 22.004, 4 GSM 02.07 B.2.1	M	Y	TSPC_Serv_SS_CFU
6	Call Forwarding on Mobile Subscriber Busy	GSM 02.04 4 3GPP TS 22.004, 4 GSM 02.07 B.2.1	M	Y	TSPC_Serv_SS_CFB
7	Call Forwarding on No Reply	GSM 02.04 4 3GPP TS 22.004, 4 GSM 02.07 B.2.1	M	Y	TSPC_Serv_SS_CFNry
8	Call Forwarding on Mobile Subscriber Not Reachable	GSM 02.04 4 3GPP TS 22.004, 4 GSM 02.07 B.2.1	M	Y	TSPC_Serv_SS_CFNrc
9	Call Waiting	GSM 02.04 4 3GPP TS 22.004, 4	O	Y	TSPC_Serv_SS_CW
10	Call Hold	GSM 02.04 4 3GPP TS 22.004, 4	O	Y	TSPC_Serv_SS_HOLD
11	Multi Party Service	GSM 02.04 4 3GPP TS 22.004, 4	O	N	TSPC_Serv_SS_MPTY
12	Closed User Group	GSM 02.04 4 3GPP TS 22.004, 4	O	Y	TSPC_Serv_SS_CUG
13	Advice of Charge (Information)	GSM 02.04 4 3GPP TS 22.004, 4	O	Y	TSPC_Serv_SS_AoCI
14	Advice of Charge (Charging)	GSM 02.04 4 3GPP TS 22.004, 4	O	Y	TSPC_Serv_SS_AoCC
15	Barring of All Outgoing Calls	GSM 02.04 4 3GPP TS 22.004, 4 GSM 02.07 B.2.1	M	Y	TSPC_Serv_SS_BAOC
16	Barring of Outgoing International Calls	GSM 02.04 4 3GPP TS 22.004, 4 GSM 02.07 B.2.1	M	Y	TSPC_Serv_SS_BOIC
17	Barring of Outgoing International Calls except those directed to the Home PLMN Country	GSM 02.04 4, GSM 02.07 B.2.1	M	Y	TSPC_Serv_SS_BOICexHC
18	Barring of All Incoming Calls	GSM 02.04 4, GSM 02.07 B.2.1	M	Y	TSPC_Serv_SS_BAIC
19	Barring of Incoming Calls when Roaming Outside the Home PLMN Country	GSM 02.04 4 3GPP TS 22.004, 4 GSM 02.07 B.2.1	M	Y	TSPC_Serv_SS_BICRoam
20	Unstructured SS Data	GSM 02.30, 4.5.2.2, GSM 02.07 B.2.1	O	Y	TSPC_Serv_SS_unstruct
21	enhanced Multi-Level Precedence and Pre-emption service (eMLPP)	GSM 02.04 4 3GPP TS 22.004,4 GSM 02.67, 3.1 3GPP TS 22.067,43	O	N	TSPC_Serv_SS_eMLPP
22	Call Deflection	GSM 02.04 4 3GPP TS 22.004,4 GSM 02.72, 3.2 3GPP TS 22.072,3.2	O	N	TSPC_Serv_SS_CD
23	User-to-User signalling	GSM 02.04 4	O	N	TSPC_Serv_SS_UUS



		3GPP TS 22.004,4 GSM 02.87, 5.1 3GPP TS 22.087,5.1			
24	Explicit Call Transfer	GSM 02.04 4 3GPP TS 22.004,4 GSM 02.91 3GPP TS 22.091,	O	N	TSPC_Serv_SS_ECT
25	Implicit UUS1	GSM 02.87 5.1 3GPP TS 22.087,5.1	O	N	TSPC_Serv_SS_ImpUUS1
26	Sending of implicit UUS1 in the ALERTING message	GSM 03.87 5.3.2 3GPP TS 23.087,5.3.1	O	N	TSPC_Serv_SS_Send_UUS1_ALERTING
27	Sending of implicit UUS1 in the CONNECT message	GSM 03.87 5.3.23GPP TS 23.087,5.3.2	O	N	TSPC_Serv_SS_Send_UUS1_CONNECT
28	Follow Me	GSM 02 94 3GPP TS 22.094,	O	N	TSPC_Serv_SS_FollowMe
29	User-to-Dispatcher Information	3GPP TS 43.068,3.1 3GPP TS 43.069,3.1	O	N	TSPC_Serv_UTDI
30	Compressed User-to-Dispatcher	3GPP TS 43.068 4.2.7 3GPP TS 43.069, 4.2.7	O	N	TSPC_Serv_Compr_UTDI
31	Completion of Calls to Busy SS	GSM 02.04 4 3GPP TS 22.004,4	O	N	TSPC_CCBS_SS
32	Completion of Calls to Busy Requests	GSM 02.04 4 3GPP TS 22.004,4	O	N	TSPC_CCBS_Req
33	Support of Private Numbering Plan SS	GSM 02.04 4 3GPP TS 22.004,4	O	N	TSPC_SPNP_SS
34	Support of PrivateNumbering Plan , NumberingPlans	GSM 02.04 4 3GPP TS 22.004,4	O	N	TSPC_Num_plans
35	Name Identification SS	GSM 02.04 4 3GPP TS 22.004,4	O	N	TSPC_CNAP

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Table A.6: Groups for possible bearer capabilities

Item	Bearer Capability Group	Ref.	Status	Support	Mnemonic
1	Bearer Service 21(20) .. 26, unrestricted digital information transfer capability	GSM 07..01B.1.2.1 3GPP TS27.001, B.1.2.1	O	Y	TSPC_BS2x_UDI
2	Bearer Service 21(20) .. 26, 3.1 kHz audio ex-PLMN information transfer capability	GSM 07..01B.1.2.2 3GPP TS27.001, B.1.2.2	O	Y	TSPC_BS2x_3.1kHz
3	Bearer Service 31(30) .. 34, unrestricted digital information transfer capability; Non-X.32 Cases (BS 31 .. BS 34)	GSM 07..01B.1.3.1 3GPP TS27.001, B.1.3.1	O	N	TSPC_BS3x_UDI_nonX.32
4	Bearer Service 31(30) .. 34, unrestricted digital information transfer capability; X.32 Cases	GSM 07..01B.1.3.1.2 3GPP TS27.001, B.1.3.1.1	O	N	TSPC_BS3x_UDI_X.32
5	Bearer Service 31(30) .. 34, 3.1 kHz audio ex-PLMN information transfer capability; Non-X.32 Cases	GSM 07.01B.1.3.2.1 3GPP TS 27.001,B.1.3.2.1	O	N	TSPC_BS3x_3.1kHz_nonX.32
6	Bearer Service 31 .. 34, 3.1 kHz audio ex-PLMN information transfer capability; X.32 Cases	GSM 07.01B.1.3.2.2 3GPP TS 27.001,B.1.3.2.2	O	N	TSPC_BS3x_3.1kHz_X.32
7	Bearer Service 41(41)..46, PAD Access Asynchronous	GSM 07.01B.1.4 3GPP TS27.001, B.1.5	O	N	TSPC_BS4x_PAD
8	Bearer Service 51(50)..53, Data Packet Duplex Synchronous	GSM 07.01B.1.5 3GPP TS 27.001, B.1.5	O	N	TSPC_BS5x_Packet
9	Bearer Service 61, Alternate Speech/Data, "Speech".	GSM 07.01 B.1.6.1 3GPP TS 27.001, B.1.6.1	O	N	TSPC_BS61_Speech
10	Bearer Service 61, Alternate Speech/Data, .3.1 kHz audio ex-PLMN information transfer capability; Asynchronous.	GSM 07.01B.1.6.2.1 3GPP TS 27.001, B.1.6.2.1	O	N	TSPC_BS61_3.1kHz_Async
11	Alternate Speech/Data, .3.1 kHz audio ex-PLMN information transfer capability; Synchronous	GSM 07.01 B.1.6.2.2 3GPP TS 27.001, B.1.26.2.2	O	N	TSPC_BS61_3.1kHz_Sync
12	Bearer Service 81, Speech followed by Data, "Speech".	GSM 07.01 B.1.7.1 3GPP TS 27.001, B.1.7.1	O	N	TSPC_BS81_Speech
13	Bearer Service 81, Speech followed by Data, .3.1 kHz audio ex-PLMN information transfer capability; Asynchronous.	GSM 07.01 B.1.7.2.1 3GPP TS 27.001, B.1.7.2.1	O	N	TSPC_BS81_3.1kHz_Async
14	Bearer Service 81, Speech followed by Data, .3.1 kHz audio ex-PLMN information transfer capability; Synchronous.	GSM 07.01 B.1.7.2.2 3GPP TS 27.001,B.1.7.2.2	O	N	TSPC_BS81_3.1kHz_Sync
15	Teleservice 11..12, Speech	GSM 07.01 B.1.8 3GPP TS 27.001, B.1.8	O	Y	TSPC_TS1x_Speech
16	Teleservice 61, Alternate Speech and Facsimile group 3; "Speech".	GSM 07.01B.1.10.1 3GPP TS27.001, B.1.8	O	N	TSPC_TS61_Speech
17	Teleservice 61, Alternate Speech and Facsimile group 3; Facsimile group 3.	GSM 07.01B.1.10.2 3GPP TS 27.001, B.1.10.2	O	N	TSPC_TS61_G3FAX
18	Teleservice 62, Automatic Facsimile group 3	GSM 07.01 1.11 3GPP TS 27.001, B.1.11	O	Y	TSPC_TS62_G3FAX

**Table A.7: Bearer Service 20..26, UDI**

Prerequisite: A.6/1 -- BS2x\_UDI (diagram in GSM 07.01 B2 1.2.1)

Item	Bearer Capability Elements	Reference	Status	Support	Values	
					Allowed	Supported
1	Signalling Access Protocol (SAP)	GSM 07.01 Annex B	M	Y	1.440, X.28nond	1.440
2	Connection Element (CE)	GSM 07.01 Annex B	M	Y	NT, bothNT, T, bothT	ALL
3	User Info Layer 2 Protocol (UIL2P)	GSM 07.01 Annex B	M	Y	ISO6429, COPnoFICt, NAV	NAV COPnoFICt
4	Number of Data Bits(NDB)	GSM 07.01 Annex B	M	Y	7 bits, 8 bits	8 bits
5	Parity Information (NPB)	GSM 07.01 Annex B	M	Y	odd, even, 0, 1, none	none
6	Number of Stop Bits (NSB)	GSM 07.01 Annex B	M	Y	1 bit, 2 bits	1 bit
7	Radio Channel Requirement (RCR)	GSM 07.01 Annex B	M	Y	HR, dualHR, FR, dualFR	FR
8	Intermediate Rate (IR)	GSM 07.01 Annex B	M	Y	8 kbps, 16 kbps	ALL
9	User Rate (UR)	GSM 07.01 Annex B	M	Y	0.3, 1.2, 2.4, 4.8, 9.6, 1.2/0.075	ALL
10	Fixed Network User Rate (FNUR)	GSM 07.01 Annex B	O	Y	9.6, 14.4, 19.2, 28.8, 38.4 48.56, NAV	14.4 (*)
11	Wanted Air Interface User Rate (WAIUR)	GSM 07.01 Annex B	O	Y	9.6, 14.4, 19.2, 28.8, 38.4, 43.2, 57.6, NAV	14.4 (*)
12	User Initiated Modification Indication (UIMI)	GSM 07.01 Annex B	O	Y	not req., upto1, upto2, upto3, upto4, NAV	not req. (*)
13	Maximum number of Traffic Channels (MaxNumTCH)	GSM 07.01 Annex B	O	Y	1, 2, 3, 4, NAV	1 (*)
10a	all allowed combinations according to GSM 07.01 B.1.2.1 implemented (if not, provide detailed description)	GSM 07.01 B.1.2.1	O	N		

(\*) only for BS 20 (14400)

**Table A.8: Bearer Service 20..26, 3.1 kHz**

Prerequisite: A.6/2 -- BS2x\_3.1kHz (diagram in GSM 07.01 B 1.2.2)

Item	Bearer Capability Elements	Reference	Status	Support	Values	
					Allowed	Supported
1	Signalling Access Protocol (SAP)	GSM 07.01 Annex B	M	Y	1.440, X.28nond	1.440
2	Connection Element (CE)	GSM 07.01 Annex B	M	Y	NT, bothNT, T, bothT	ALL
3	User Info Layer 2 Protocol (UIL2P)	GSM 07.01 Annex B	M	Y	ISO6429, COPnoFICt, NAV	NAV COPnoFICt
4	Number of Data Bits(NDB)	GSM 07.01 Annex B	M	Y	7 bits, 8 bits	8 bits
5	Parity Information (NPB)	GSM 07.01 Annex B	M	Y	odd, even, 0, 1, none	none
6	Number of Stop Bits (NSB)	GSM 07.01 Annex B	M	Y	1 bit, 2 bits	1 bit
7	Radio Channel Requirement (RCR)	GSM 07.01 Annex B	M	Y	HR, dualHR, FR, dualFR	FR
8	Intermediate Rate (IR)	GSM 07.01 Annex B	M	Y	8 kbps, 16 kbps	ALL
9	User Rate (UR)	GSM 07.01 Annex B	M	Y	0.3, 1.2, 2.4, 4.8, 9.6, 1.2/0.075	ALL
10	Modem Type (MT)	GSM 07.01 Annex B	M	Y	V.21, V.22, V.22bis, V.26ter V.32, V.23, auto	ALL EXCEPT V.26ter
11	Fixed Network User Rate (FNUR)	GSM 07.01 Annex B	O	Y	9.6, 14.4, 19.2, 28.8, NAV	14.4 (*)
12	Wanted Air Interface User Rate (WAIUR)	GSM 07.01 Annex B	O	Y	9.6, 14.4, 19.2, 28.8, 38.4, 43.2	14.4 (*)
13	Acceptable channel codings (ACC)	GSM 07.01 Annex B	O	Y	4.8, 9.6, 14.4, NAV	9.6, 14.4 (*)
14	User Initiated Modification Indication (UIMI)	GSM 07.01 Annex B	O	Y	not req., upto1, upto2, upto3, upto4, NAV	not req. (*)
15	Maximum number of Traffic Channels (MaxNumTCH)	GSM 07.01 Annex B	O	Y	1, 2, 3, 4, NAV	1 (*)
11a	all allowed combinations according to GSM 07.01 B.1.2.2 implemented (if not, provide detailed description)	GSM 07.01 B.1.2.2	O	Y		

(\*) only for BS 20 (14400)

**Table A.21: Teleservice 11..12, Speech**

Prerequisite: A.6/15 -- TS1x\_Speech (diagram in GSM 07.01 A2 1.8)

Item	Bearer Capability Elements	Ref.	Status	Support	Values
1	Radio Channel Requirement (RCR)	GSM 07.01 Annex A	M	Y	Dual/FR

**Table A.24: Teleservice 62, Automatic G3 fax**

Prerequisite: A.3/7 -- Serv\_TS62 (diagram in GSM 07.01 B.1.11 (3GPP TS 27.001 B.1.11)).

Item	Bearer Capability Elements	Ref.	Status	Support	Values
1	Connection Element (CE)	GSM 07.01annex B 3GPP TS 27.001, annex B	M	Y	T
2	User Info Layer 2 Protocol (UIL2P).	GSM 07.01annex B 3GPP TS 27.001, annex B	M	Y	NAV
3	Intermediate Rate (IR).	GSM 07.01annex B 3GPP TS 27.001, annex B	M	Y	8 kbps, 16 kbps
4	User Rate (UR).	GSM 07.01annex B 3GPP TS 27.001, annex B	M	Y	2.4, 4.8, 9.6
5	all allowed combinations according to GSM 07.01 B.1.11 (3GPP TS 27.001, annex B) implemented (if not, provide detailed description).	A	O	Y	



**Table A.25: Additional Information.**

Item	Additional Information	Ref.	Status	Support	Mnemonic
1	at least one half rate service	GSM 02.06 3.2.2	O	Y	TSPC_AddInfo_HalfRate
2	full rate speech mode	GSM 02.06 3.2.2, GSM 02.01 A.1.1	C2501	Y	TSPC_FullRateSpeech
3	half rate speech mode	GSM 02.06 3.2.2, GSM 02.01 A.1.1	O	Y	TSPC_HalfRateSpeech
4	at least one data service	GSM 07.01 annex D, GSM 09.07, 3	O	Y	TSPC_DataSvc
5	at least one full rate data service	GSM 07.01 annex D, GSM 09.07, 3	C2502	Y	TSPC_AddInfo_FullRateData
6	at least one half rate data service	GSM 07.01 annex B	O	N	TSPC_HalfRateData
7	at least one non transparent data service	GSM 02.02 3, GSM 02.03 6	O	Y	TSPC_AddInfo_NonTransData
8	at least one transparent data service	GSM 02.02 3, GSM 02.03 6	O	Y	TSPC_AddInfo_TransData
9	only transparent data service	GSM 02.02 3, GSM 02.03 6	O	N	TSPC_TranspDataOnly
10	at least one asynchronous data service	GSM 02.02 3, GSM 07.01 Annex B	O	Y	TSPC_AddInfo_AsyncData
11	at least one asynchronous non transparent data service	GSM 02.02 3, GSM 07.01 Annex B	O	Y	TSPC_AddInfo_AsyncNonTransData
12	2.4 k full rate data mode	GSM 02.02 3, GSM 07.01 Annex B,	C2503	Y	TSPC_24DataF
13	2.4 k half rate data mode	GSM 02.02 3, GSM 07.01 Annex B,	O	N	TSPC_24DataH
14	4.8 k full rate data mode	GSM 02.02 3, GSM 07.01 Annex B,	C2504	Y	TSPC_48DataF
15	4.8 k half rate data mode	GSM 02.02 3, GSM 07.01 Annex B,	O	N	TSPC_48DataH
16	9.6 k full rate data mode	GSM 02.02 3, GSM 07.01 Annex B,	O	Y	TSPC_96Data
17	non transparent service with full rate channel at a user rate of 4.8 kbit/s	GSM 02.02 3, GSM 07.01 Annex B,	O	Y	TSPC_AddInfo_fullRate4.8
18	at least one bearer capability	GSM 07.01 Annex B	O	Y	TSPC_BC
19	at least one MT circuit switched basic service	GSM 04.08, 5.3.4.2.2	O	Y	TSPC_MTsvc
20	at least one MO circuit switched basic service	GSM 04.08 5.3.4.2.1	O	Y	TSPC_MOsvc
21	only SDCCH	GSM 02.06 3.2.2	O	N	TSPC_SDCCHOnly
22	at least one service on traffic channel	GSM 02.03 Annex A	O	Y	TSPC_SvcOnTCH
23	dual rate channel types	GSM 02.06 3.2.2	O	Y	TSPC_DualRate
24	only full rate channel type	GSM 02.06 3.2.2	O	N	TSPC_FullRateOnly
25	at least one teleservice	GSM 02.03 6	O	Y	TSPC_TeleSvc
26	CC protocol for at least one BC	GSM 04.08 5	O	Y	TSPC_CC
27	only circuit switched basic service supported by the mobile is emergency call	GSM 02.03 6, A.1.2	O	N	TSPC_EmgOnly
28	Fax Error Correction Mode	GSM 03.45, GSM 03.46	O	N	TSPC_AddInfo_FaxErrCorr
29	at least one supplementary service	GSM 02.04 4, GSM 02.07 B.2.1	M	Y	TSPC_SS
30	non call related supplementary service	GSM 02.04 4	O	Y	TSPC_NonCallSS
31	at least one short message service (SMS) reply procedure	GSM 02.03 B.1.7, A.1.3	M	Y	TSPC_SMS
32	(SMS) reply procedure	GSM 03.40 3	O	Y	TSPC_ReplyProc
33	replace SMS	GSM 03.40 3	O	Y	TSPC_ReplaceSMS
34	display of received SMS	GSM 3.40 7.1, GSM 3.41 8	O	Y	TSPC_DispRcvSMS

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35	SMS status report capabilities	GSM 03.40 3	O	Y	TSPC_SMSStatusRepCap
36	Storing of short messages in the SIM	GSM 03.38 4	O	Y	TSPC_StoreRcvSMSSIM
37	Storing of short messages in the ME	GSM 03.38 4	O	N	TSPC_StoreRcvSMSME
38	detach on power down	GSM 04.08 4.3.4	O	Y	TSPC_DetachOnPwrDn
39	detach on SIM remove	GSM 04.08 4.3.4	O	Y	TSPC_DetachOnSIMRmv
40	SIM removable without power down	GSM 02.17 5.7	O	Y	TSPC_SIMRmv
41	ID-1 SIM	GSM 2.17 4.1.1	O.2502	N	TSPC_AddInfo_ID1
42	Plug-In SIM	GSM 2.17 4.1.2	O.2502	Y	TSPC_AddInfo_Plugin
43	Disable PIN feature	GSM 2.17 5.6	O	Y	TSPC_AddInfo_DisablePin
44	PIN2 feature	GSM 2.17 5.6	O	Y	TSPC_AddInfo_Pin2
45	Feature requiring entry of PIN2	GSM 2.17 5.6	O	Y	TSPC_AddInfo_Pin2Feature
46	Chars 0-9, *, #	GSM 02.30 2.3, GSM 02.07 B.1.5	M	Y	TSPC_BasCharSet
47	A, B, C, D chars	GSM 02.30 2.3	O	N	TSPC_AddCharSet
48	Automatically enter automatic selection of PLMN mode	GSM 02.11 3.2	O	N	TSPC_AutoAutoMode
49	alerting indication to the user	GSM 04.08 5.2.1.5	O	Y	TSPC_AlertInd
50	Appl. Layer is always running	GSM 11.10 18.1	O	N	TSPC_AddInfo_ApplAlwaysRun
51	Immediate connect	GSM 04.08 5.2.1.6	O	N	TSPC_ImmConn
52	In-Call modification	GSM 04.08 5.3.4.3	O	Y	TSPC_InCallMod
53	follow-on request procedure	GSM 04.08 4.4.4.6	O	N	TSPC_followOnReq
54	refusal of call	GSM 04.08 5.2.2.3.1	O	Y	TSPC_RefusalCall
55	RF amplification	GSM 04.08 3.4.10	O	N	TSPC_RFamp
56	Number of B-party number for autocalling is greater than the number of entries in the blacklist	GSM 02.07 Annex A	O	N	TSPC_AddInfo_AutocallBnoGreaterM
57	Handset MS supporting speech	GSM 03.50 3.1.1	O	Y	TSPC_AddInfo_SpeechHandset
58	MT2 Configuration	GSM 04.02 3	O	Y	TSPC_AddInfo_MT2
59	MT2 Configuration or any other possibility to send data over Um interface	GSM 04.02 3	O	Y	TSPC_AddInfo_MT2orOther
60	Permanent Antenna Connector	3GPP TS 51.010-1 12.1.1, 12.1.2	O	Y	TSPC_AddInfo_PermAntenna
61	Pseudo-synchronized handover supported.	GSM 05.10 2, annex A	O	Y	TSPC_AddInfo_PseudoSynch
62	5V only SIM/ME interface	GSM 11.11	O	N	TSPC_AddInfo_5V
63	3V only SIM/ME interface	GSM 11.12	O	Y	TSPC_AddInfo_3V
64	5V/3V SIM/ME interface	GSM 11.12	O	N	TSPC_AddInfo_3V5V
65	Enhance full rate speech	GSM 06.51	O	Y	TSPC_EFR
66a	RLP supports non default parameters	GSM 04.22 5.2.2.6	O	Y	TSPC_AddInfo_NonDefaultRlpParam
66b	Support of listening to voice broadcast calls (VBS listening)	GSM 04.22 5.2.2.6	O	N	TSPC_AddInfo_NonDefaultRlpParam
67	Support of originating voicebroadcast call (VBSoriginating)	GSM 04.08, 0.7	O	N	TSPC_AddInfo_VBS_Originating
68	Support of listening to voice group calls (VGCS listening)	GSM 04.08, 0.7	O	N	TSPC_AddInfo_VGCS_Listening
69	Support of talking in voice group calls (VGCS talking)	GSM 04.08, 0.7.1	O	N	TSPC_AddInfo_VGCS_Talking
70	Support of originating voice group call (VGCS originating)	GSM 04.08, 0.7.1	O	N	TSPC_AddInfo_VGCS_Originating
71	Support reduced NCH monitoring	GSM 04.08, 3.3.3.3	O	N	TSPC_AddInfo_NCH_ReducedMonitor
72	14.4 k data mode	GSM 02.02 3, GSM 07.01 Annex B,	O	Y	TSPC_AddInfo_144Data

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73	Implementation of cause number 27 of busy autocaling in category 2	GSM 02.07, Annex A	O	N	TSPC_AddInfo_Impl_CNr27_Cat2
74	Implementation of cause number 27 of busy autocaling in category 3	GSM 02.07, Annex A	O	N	TSPC_AddInfo_Impl_CNr27_Cat3
75	Support of immediate connect	GSM 04.08, 5.2.1.6	O	N	TSPC_AddInfo_imm_Con
76	Artificial ear type 1	GSM 03.50	O	N	TSPC_AddInfo_Ear_type1
77	Artificial ear type 3.2, Low leak option	GSM 03.50	O	N	TSPC_AddInfo_Ear_type32_LL
78	Artificial ear type 3.4	GSM 03.50	O	N	TSPC_AddInfo_Ear_type34
79	Speech supported for MultiRate version 1	GSM 05.09 3.4	O	N	TSPC_AddInfo_AMR
80	NCH monitoring in group receive mode	GSM 03.68 11.3.1.3.a	O	N	TSPC_AddInfo_NCH_Monit_Rev
81	NCH monitoring in group transmit mode	GSM 03.68 11.3.1.3.a	O	N	TSPC_AddInfo_NCH_Monit_Tra
82	NCH monitoring in dedicated mode	GSM 03.68 11.3.1.3.a	O	N	TSPC_AddInfo_NCH_Monit_Ded
83	Support of one PDP context activation	GSM 04.08 3GPP TS 24.008	O	Y	TSPC_AddInfo_1PDP_CA
84	Support of more than one PDP context activation	GSM 04.08 3GPP TS 24.008	O	Y	TSPC_AddInfo_morPDP_C A
85	Support of more than one PDP context activation simultaneously on the same SAPI	GSM 04.08 3GPP TS 24.008	O	N	TSPC_AddInfo_mor1PDPC A_SAPI
86	Support of GPRS data compression	GSM 04.65, 6.6	O	N	TSPC_AddInfo_GPRS_Data_Cmpr
87	Support of GPRS header compression	GSM 04.65	O	N	TSPC_AddInfo_GPRS_Hea der_Cmpr
88	Support of Network requested PDP context activation	GSM 04.08	O	N	TSPC_AddInfo_N_req_PDP_CA
89	Support for user settings of minimum QoS	GSM 02.60	O	Y	TSPC_AddInfo_min_QoS
90	Automatic GPRS attach procedure at switch-on/power-on	GSM 04.08, 4.7.3	O	Y	TSPC_AddInfo_on_auto_G PRS_AP
91	MMI controlled attach/detach procedures for non-GPRS services	GSM 04.08, 4.7.3.1.4	O	N	TSPC_AddInfo_MMI_contr_ A/DProc_Non GPRS
92	Automatic attach procedure when MS identity cannot derived by the network	GSM 04.08, 4.7.5.1.4	O	Y	TSPC_AddInfo_auto_AP_n o_MS ID
93	Automatic MM IMSI attach procedure at switch-on / power-on	GSM 04.08, 4.7.3.2.4	O	N	TSPC_AddInfo_auto_MM_I MSI_AP_on/off
94	Support of SIM Application Toolkit	GSM 11.11 , 11.6	O	N	TSPC_AddInfo_SIM_Appl_T oolkit
95	1,8V only SIM/ME interface.	GSM 11.18	O	N	TSPC_AddInfo_1,8V
96	1,8V/3V SIM/ME interface.	GSM 11.18	O	N	TSPC_AddInfo_1,8V3V
97	Multiple SM MO/PP on same RR link	GSM 03.40 3.7 3GPP TS 23.040, 3.7	O	N	TSPC_AddInfo_MultSMSam eRR
98	Support of stored list cell selection	GSM 05.08	O	Y	TSPC_AddInfo_StoredListC ellSel
99	at least one service not support immediate connection	GSM 04.08	O	N	TSPC_AddInfo_NoimmCon n
100	Void				
101	Void				
102	EFR_EmgCallSetup message contains the bearer capability	GSM 06.51	O	N	TSPC_AddInfo_EFR_EmgC allBcap
103	Support of MonitorPCH_GroupTransmit Mode	GSM 11.10-1	O	N	TSPC_AddInfo_MonitorPCH_GroupTransmitMode
104	Integral_Antenna Connector	3GPP TS 51.010-1 12	O	N	TSPC_AddInfo_IntegrAnten na

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105	User requested combined GPRS and non-GPRS detached without powering off	GSM 04.08, 4.7.4	O	N	TSPC_AddInfo_Comb_DP_no_pwr_off
106	User requested non-GPRS detached	GSM 04.08, 4.7.4	O	N	TSPC_AddInfo_Usr_non_GPRS_DP
107	Artificial ear type 3.2, High leak option	3GPP TS 43.050	O	N	TSPC_AddInfo_Ear_type32_HL
108	Artificial ear type 3.3	3GPP TS 43.050	O	N	TSPC_AddInfo_Ear_type33
109	Support of Multiple SMS	3GPP TS 03.40 3.7 3GPP TS 23.040, 3.7	O	Y	TSPC_AddInfo_MultSMS
110	Cell Reselection after T3184 Expiry	3GPP TS 04.60	O	N	TSPC_Cell_Resel
111	GPRS attach attempted automatically due to outstanding request	3GPP TS 04.08, 4.7.3 3GPP TS 24.008, 4.7.3	O	Y	TSPC_AddInfo_GPRS_Attach_Attempt_Outstanding
112	Speech supported for Half rate version 3 (HR AMR)	3GPP TS 04.08, 10.5.4.5 3GPP TS 24.008, 10.5.4.5	O	N	TSPC_AddInfo_Half_rate_version_3
113	AMR LoopBack I	3GPP TS 44.014	C2502	N	TSPC_AMR_LoopBack_I
	Round Trip Delay for loop C	3GPP TS 04.14	O	12 bursts	
	XID negotiation		O	N	
	Automatic MM IMSI attach procedure for MS operation mode B MS	GSM 11.10-1	O	N	