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Technical Specification

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Foreword

This Technical Specification has been produced by the 3GPP.

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of this TS, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
 - 1 presented to TSG for information;
 - 2 presented to TSG for approval;
 - 3 Indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the specification;

1 Scope

The present document specifies for Mobile Stations (MS), for 3rd Generation WCDMA system, those ME functions which are required for conformance testing purposes.

For conformance tests, functions are activated via the radio interface. These functions shall be capable of being activated when a test USIM is present or no USIM is present, but shall not function with any other (e.g. network) USIM present except where otherwise stated within the present specification. In this state, the MS shall be able to perform all functions specified in the present TS except where otherwise stated; in addition however, the special conformance testing functions must be operational.

USIM, in general, is described in [] TS 31.101. The ME recognizes the test USIM by the Administrative Data Field. Test USIM data fields are described in [TBD].

[Editor's Note: References to be added to specification and clause where the test USIM parameters are to be defined (for GSM this is GSM 11.10-1 Annex 4.)]

The present TS applies to the unit which includes the hardware to establish a connection across the radio interface.

In the present document, only loopback with single DCH for DTCH channel (=code) is specified. Test loops for multiple channels (=codes) are not standardized.

2 References

The following documents contain provisions, which through reference in this text constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, subsequent revisions do apply.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

[]	TS 24.007 "Mobile radio interface signalling layer 3; General aspects"
[]	TS 24.008 "Digital cellular telecommunications system (Phase 2+); Mobile radio interface layer 3 specification"
[]	TS 25.101 "UE Radio transmission and reception (FDD)"
[]	TS 25.102 "UE Radio transmission and reception (TDD)"
[]	TS 25.331 "Radio Resource Control; Protocol Specification"
[]	TS 31.101 "UICC Physical and Logical Characteristics"
[]	TS 34.121 "Terminal Conformance Specification; Radio transmission and reception (FDD)"
[]	TS 34.122 "Terminal Conformance Specification; Radio transmission and reception (TDD)"
[]	TR 25.990 "Vocabulary for UTRAN"

3 Definitions, symbols and abbreviations

3.1 Abbreviations

Abbreviation used in the present TS are listed in [] TR 25.990.

For the purposes of the present document, the following additional abbreviations apply:

SAPI	Service Access Point Indicator
SS	System Simulator
UICC	UMTS Integrated Circuit Card

3.2 Symbols

For the purposes of the present document, the following symbols apply:

[TBD]

3.3 Definitions

For the purposes of the present document, the following definitions apply:

MS (Mobile station)	Mobile station that is under test.
SS (System Simulator)	Test system (or equipment) which drives the test process between MS, like BS (Base Station) simulator.
User	Test user, who handles the test and measurement process via the logical test interface
Logical Test Interface	Interface which provides the logical service to interwork and to communicate between MS and System Simulator during the test of a MS.
Logical service	Logical service is composed of message set (Set/Get/Action), which works upon test object from System Simulator to MS.
Test Object	Each test condition and item is defined as a test object logically.

3.4 Mobile station definition and configurations

MS definition and configurations is specified in [TBD].

4 Not used

[Editor's note: This clause will be removed and the rest of the document will be renumbered]

5 Activation and deactivation of special test functions in the MS

5.1 General description

The functions described in the present TS can be activated and deactivated from a SS by sending appropriate Layer 3 commands to the MS. See clause 8 for definition of the layer 3 commands.

The underlying protocols are specified in clause 9.

Apart from sending the appropriate deactivation command to the MS the functions can be deactivated by switching off the MS.

The following MS special testing functions can be activated (and deactivated):

- FDD DTCH Loop
- Power closed loop control enable/disable
- Tx (Transmitter) carrier on/off

[Editor's note: It has not yet been decided if the EMMI and DAI interface is to be specified for 3G terminals. If the DAI interface is to be used then the following statement needs to be stated: "The TCH loops and the test via DAI are test functions, which are mutually exclusive".]

[Editor's note: RAN4 uses terms inner loop power control and outer loop power control for closed loop power control. According to proposal (R4-99485) e.g. outer loop power control is switched off during the test. The need for specific test command to switch inner loop PC and outer loop PC OFF and ON independently is FFS.]

[Editor's note: The need for the TX (transmitter) carrier on/off command is for further study]

5.2 FDD DTCH Loop

The FDD DTCH test loop is specified in clause 7.2.

The SS can control the FDD DTCH test loop by sending the following Layer 3 messages to the MS:

- CLOSE_FDD_DTCH_LOOP_CMD
- OPEN_FDD_DTCH_LOOP_CMD

The MS confirms closing of the FDD DTCH test loop by sending the following Layer 3 message to the SS:

- CLOSE_FDD_DTCH_LOOP_ACK

See clause 8 for specification of the messages.

5.3 Closed loop power control - enable/disable

The SS can enable/disable the closed loop power control by sending the following Layer 3 commands to the MS:

- ENABLE_CLOSED_LOOP_PWR_CTRL_CMD
- DISABLE_CLOSED_LOOP_PWR_CTRL_CMD

The MS confirms that closed loop power control loop has been enabled/disabled by sending the following Layer 3 messages to the SS:

- ENABLE_CLOSED_LOOP_PWR_CTRL_ACK

- DISABLE_CLOSED_LOOP_PWR_CTRL_ACK

See clause 8 for specification of message content.

5.4 Tx (Transmitter) carrier - on/off control

[Editor's note: The need for the TX (transmitter) carrier on/off command is for further study]

The SS can control the transmitter carrier on/off by sending the following Layer 3 messages to the MS:

- TX_CARRIER_ON_CMD
- TX_CARRIER_OFF_CMD

The MS acknowledge that it has switched the Tx carrier on/off by returning the following Layer 3 messages to the SS:

- TX_CARRIER_ON_ACK
- TX_CARRIER_OFF_ACK

See clause 8 for specification of message content.

6 Retrieving of MS status data

6.1 General description

The MS status data can be set and retrieved by SS by sending appropriate Layer 3 commands to the MS. See clause 8 for definition of the Layer 3 commands.

The underlying protocols are specified in clause 9.

The following MS status data may be retrieved using the logical test interface:

- [SIR of primary BS (=cell) in dB]

[Editor's note: The need for providing the SS with the MS estimated SIR value is FFS]

6.2 SIR of primary BS

[TBD]

7 Internal test loops

[Editor's note: Test loops for TDD is FFS]

[Editor's note: BLER measurement loop for FDD packet switch data is for FFS. However, the FDD BLER measurement loop (FDD-B) may also be applicable for Packet Data BLER measurement too.]

7.1 General description

A number of internal test loops are required providing access to isolated functions of the MS without introducing new physical interfaces just for the reason of conformance testing. Figure 7.1.1 shows a functional block diagram of a reference MS containing the different test loops.

NOTE: It should be emphasized that these test loops only describe the functional behaviour of the MS with respect to its external interfaces; physical implementation of the loops is completely left open to the manufacturer.

A particular loop is activated in an MS by transmitting the appropriate command message to the MS, see clause 5.

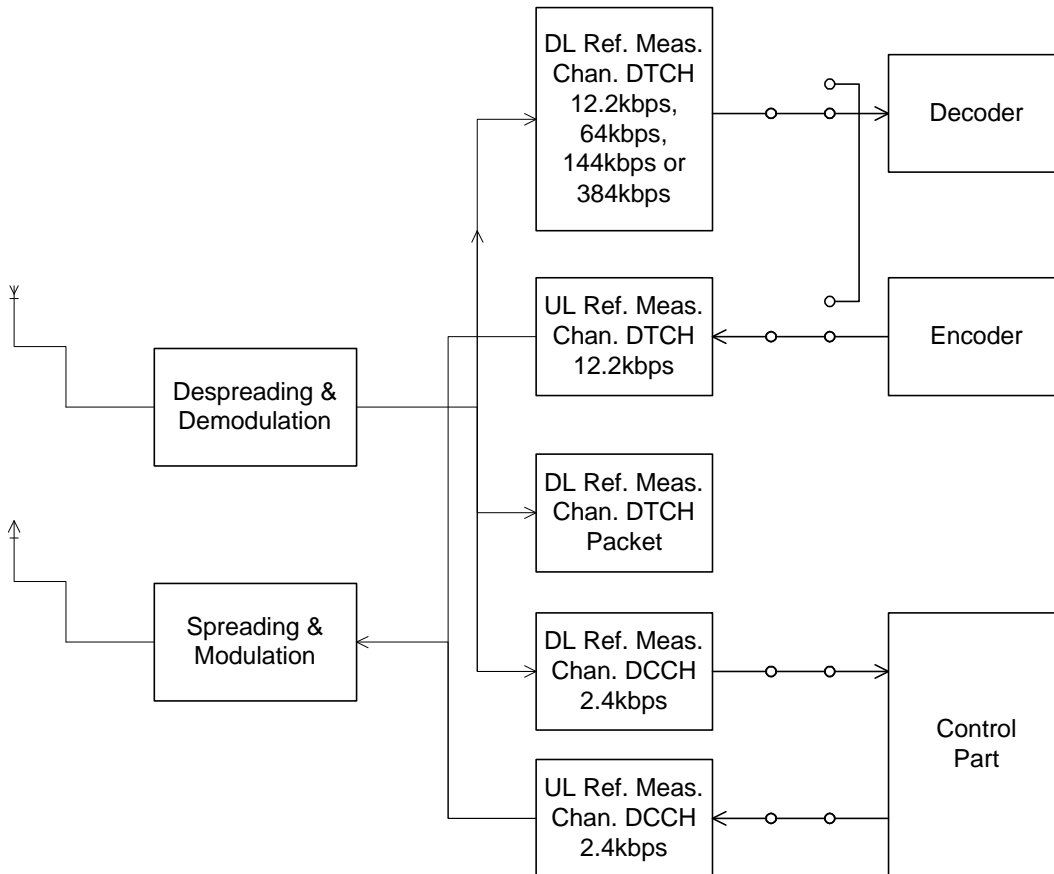


Figure 7.1.1 Test loops in the MS

7.2 FDD DTCH loop

7.2.1 Purpose

The FDD DTCH test loop is intended for

- testing of receiver characteristics based on BER (Bit Error Rate) measurement. The SS calculates BER from a bit-by-bit comparison of data sent to and received from MS. BER measurement requires DTCH UL/DL symmetric user bit-rates.
- testing of receiver performance based on BLER (Block Error Rate) measurement. The SS calculates BLER based on the [ACK/NACK] messages received from the MS operating in RLC acknowledged mode.
- testing of MS transmitter characteristics.
- testing of MS transmitter DTX characteristics.

7.2.2 Applicability

The FDD DTCH test loop is applicable to all MS.

7.2.3 Generic Procedure

The control sequence for the FDD DTCH test loop is illustrated in figure 7.2.3.

The SS setups the DTCH radio access bearer using the generic call setup procedure. See Annex A for specification of the generic call setup procedure.

The SS orders the MS to close its DTCH loop by transmitting a CLOSE_FDD_DTCH_LOOP_CMD message. The SS then starts timer TT01.

If no DTCH test loop is active, or if any test loop is closed, the MS shall ignore any CLOSE_FDD_DTCH_LOOP_CMD message.

If a DTCH is active, the MS shall close its DTCH loop and send back to the SS a CLOSE_FDD_DTCH_LOOP_ACK message. Upon reception of this message the SS stops timer TT01.

After the MS has closed its DTCH loop, every user data block received by the MS on the DTCH (downlink) shall be taken from the output of the channel decoder and be input to the channel encoder and transmitted on the same DTCH (uplink).

If the downlink (DL) user bit-rate is higher than the uplink (UL) user bit-rate then the MS shall return the first N bits of the received block, where N is the UL block size.

If the UL user bit-rate is higher than the DL user bit-rate then the MS shall fill the UL send block by repeating the received data block until the UL send block has been filled (truncating the last block if necessary).

The MS shall provide for normal layer 1 DTX operation, that is if DTX is enabled and no data is to be transmitted (i.e. no data is received while the DTCH loop is closed) then the MS shall switch off the UL DPDCH and only transmit the DPCCH.

If the DTCH loop is closed, the MS shall open its DTCH loop when a OPEN_FDD_DTCH_LOOP message is received.

If the DTCH loop is open, the MS shall ignore any OPEN_FDD_DTCH_LOOP message.

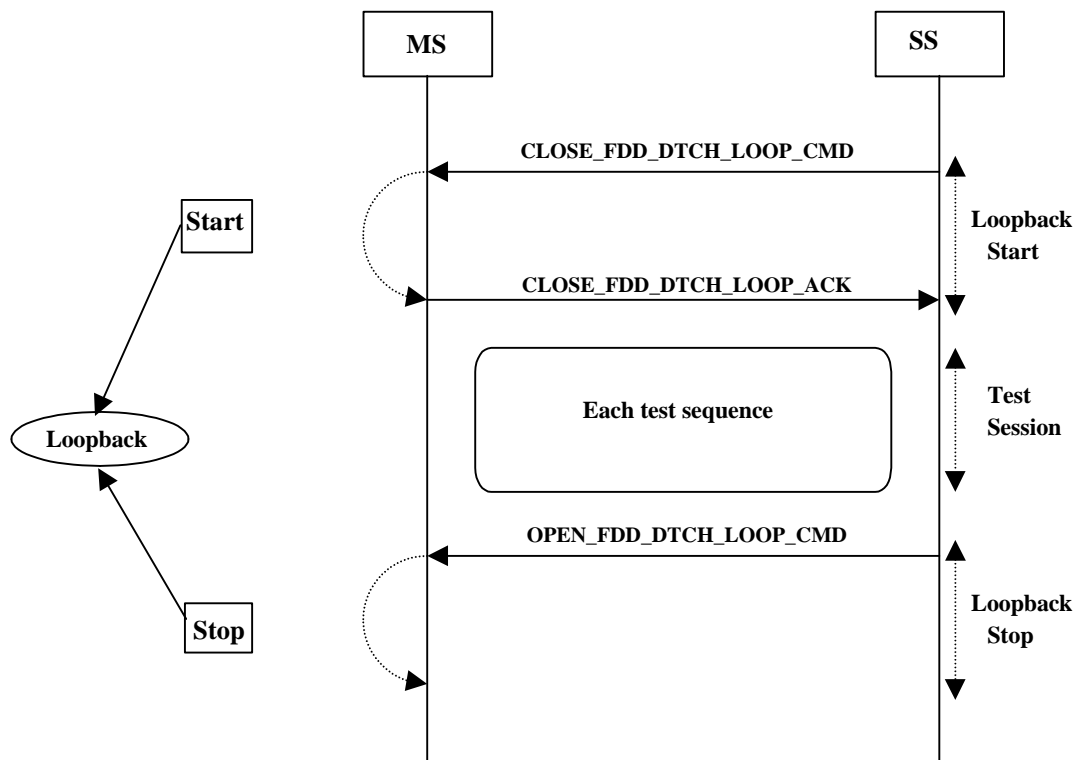


Figure 7.2.3 : FDD DTCH loop control

7.2.4 FDD DTCH test loop use scenarios

NOTE 1: The use scenarios do not include all details regarding the FDD DTCH test loop. The detailed operation of the MS and SS shall be according to the generic procedure as specified in 7.2.3.

7.2.4.1 Measurement of receiver characteristics (BER) – DL reference measurement channel (12.2kbps)

The SS setups the DTCH radio access bearer for DL and UL reference measurement channels 12.2kbps using the generic call setup procedure.

See Annex A for specification of the generic call setup procedure.

See [] TS 25.101 A.2.1 and A.2.2 for definition of the DL and UL reference measurement channel 12.2kbps.

The SS orders the MS to close its DTCH loop by transmitting a CLOSE_FDD_DTCH_LOOP_CMD message.

When the SS receives the CLOSE_FDD_DTCH_LOOP_ACK message from the MS the SS starts the transmission of data to the MS.

The SS compares the received and sent data bit-by-bit to calculate the bit error rate, BER.

The SS sends the OPEN_FDD_DTCH_LOOP message to the MS to open the FDD DTCH test loop.

7.2.4.2 Measurement of receiver performance (BLER) – DL reference measurement channel (12.2kbps)

The SS setups the DTCH radio access bearer for DL and UL reference measurement channels 12.2kbps using the generic call setup procedure with the RLC information element of the RADIO_ACCESS_BEARER_SETUP message set according to table 7.3.4.2.

See Annex A for specification of the generic call setup procedure.

See [] TS 25.101 A.2.1 and A.2.2 for definition of the DL and UL reference measurement channel 12.2kbps.

Table 7.2.4.2: RLC info element (DL reference measurement channel 12.2kbps)

Parameters	Value	Notes
UL RLC mode	[TBD]	
UL RLC in-sequence delivery	[TBD]	
UL RLC PDU Size	[TBD]	
UL RLC transmission window size	[TBD]	
UL RLC retransmission info	[TBD]	
DL RLC mode	[RLS acknowledged mode]	
DL RLC in-sequence delivery	[TBD]	
DL RLC PDU size	[244 Bytes]	The RLC PDU size shall be the same length as defined for DL reference measurement channel 12.2 kbps, see [] TS 25.101 A.2.2
DL RLC transmission window size	[TBD]	
DL RLC retransmission info	[TBD]	

The SS orders the MS to close its DTCH loop by transmitting a CLOSE_FDD_DTCH_LOOP_CMD message.

When the SS receives the CLOSE_FDD_DTCH_LOOP_ACK message from the MS the SS starts the transmission of data to the MS.

The SS counts the number of transmitted blocks (Ntot) and the number of retransmission requests (Nerr) received by the MS.

The SS calculates block error rate, BLER as the ratio between the number of retransmission requests and the total number of transmitted blocks (Nerr/Ntot).

The SS sends the OPEN_FDD_DTCH_LOOP message to the MS to open the FDD DTCH test loop.

7.2.4.3 Measurement of receiver performance (BLER) – DL reference measurement channel (64kbps)

The SS setups the DTCH radio access bearer for DL reference measurement channel 64kbps and UL reference measurement channel 12.2kbps using the generic call setup procedure with the RLC information element of the RADIO_ACCESS_BEARER_SETUP message set according to table 7.3.4.3.

See Annex A for specification of the generic call setup procedure.

See [] TS 25.101 A.2.1 for definition of the UL reference measurement channel 12.2kbps.

See [] TS 25.101 A.2.3 for definition of the DL reference measurement channel 64kbps.

Table 7.2.4.3: RLC info element (DL reference measurement channel 64kbps)

Parameters	Value	Notes
UL RLC mode	[TBD]	
UL RLC in-sequence delivery	[TBD]	
UL RLC PDU Size	[TBD]	
UL RLC transmission window size	[TBD]	
UL RLC retransmission info	[TBD]	
DL RLC mode	[RLS acknowledged mode]	
DL RLC in-sequence delivery	[TBD]	
DL RLC PDU size	[1080 Bytes]	The RLC PDU size shall be the same length as defined for DL reference measurement channel 64kbps, see [] TS 25.101 A.2.3
DL RLC transmission window size	[TBD]	
DL RLC retransmission info	[TBD]	

Perform the procedure as described in 7.3.4.2

7.2.4.4 Measurement of receiver performance (BLER) – DL reference measurement channel (144kbps)

The SS setups the DTCH radio access bearer for DL reference measurement channel 144kbps and UL reference measurement channel 12.2kbps using the generic call setup procedure with the RLC information element of the RADIO_ACCESS_BEARER_SETUP message set according to table 7.3.4.4.

See Annex A for specification of the generic call setup procedure.

See [] TS 25.101 A.2.1 for definition of the UL reference measurement channel 12.2kbps.

See [] TS 25.101 A.2.4 for definition of the DL reference measurement channel 144kbps.

Table 7.2.4.4: RLC info element (DL reference measurement channel 144kbps)

Parameters	Value	Notes
UL RLC mode	[TBD]	
UL RLC in-sequence delivery	[TBD]	
UL RLC PDU Size	[TBD]	
UL RLC transmission window size	[TBD]	
UL RLC retransmission info	[TBD]	
DL RLC mode	[RLS acknowledged mode]	
DL RLC in-sequence delivery	[TBD]	
DL RLC PDU size	[2880 Bytes]	The RLC PDU size shall be the same length as defined for DL reference measurement channel 144kbps, see [] TS 25.101 A.2.4
DL RLC transmission window size	[TBD]	
DL RLC retransmission info	[TBD]	

Perform the procedure as described in 7.3.4.2

7.2.4.5 Measurement of receiver performance (BLER) – DL reference measurement channel (384kbps)

The SS setups the DTCH radio access bearer for DL reference measurement channel 384kbps and UL reference measurement channel 12.2kbps using the generic call setup procedure with the RLC information element of the RADIO_ACCESS_BEARER_SETUP message set according to table 7.3.4.5.

See Annex A for specification of the generic call setup procedure.

See [] TS 25.101 A.2.1 for definition of the UL reference measurement channel 12.2kbps.

See [] TS 25.101 A.2.5 for definition of the DL reference measurement channel 384kbps.

Table 7.2.4.5: RLC info element (DL reference measurement channel 384kbps)

Parameters	Value	Notes
UL RLC mode	[TBD]	
UL RLC in-sequence delivery	[TBD]	
UL RLC PDU Size	[TBD]	
UL RLC transmission window size	[TBD]	
UL RLC retransmission info	[TBD]	
DL RLC mode	[RLS acknowledged mode]	
DL RLC in-sequence delivery	[TBD]	
DL RLC PDU size	[7680 Bytes]	The RLC PDU size shall be the same length as defined for DL reference measurement channel 384kbps, see [] TS 25.101 A.2.5
DL RLC transmission window size	[TBD]	
DL RLC retransmission info	[TBD]	

Perform the procedure as described in 7.3.4.2

7.2.4.6 Measurement of transmitter characteristics

The SS setups the DTCH radio access bearer for DL and UL reference measurement channels 12.2kbps using the generic call setup procedure.

See Annex A for specification of the generic call setup procedure.

See [] TS 25.101 A.2.1 and A.2.2 for definition of the DL and UL reference measurement channel 12.2kbps.

The SS orders the MS to close its DTCH loop by transmitting a CLOSE_FDD_DTCH_LOOP_CMD message.

When the SS receives the CLOSE_FDD_DTCH_LOOP_ACK message from the MS the SS starts transmission of data to the MS.

Perform the transmitter test.

The SS sends the OPEN_FDD_DTCH_LOOP message to the MS to open the FDD DTCH test loop.

7.2.4.7 Measurement of transmitter DTX characteristics

The SS requests the MS to enable DTX and setups the DTCH radio access bearer for DL and UL reference measurement channels 12.2kbps using the generic call setup procedure.

See Annex A for specification of the generic call setup procedure.

See [] TS 25.101 A.2.1 and A.2.2 for definition of the DL and UL reference measurement channel 12.2kbps.

The SS orders the MS to close its DTCH loop by transmitting a CLOSE_FDD_DTCH_LOOP_CMD message.

The MS confirms that the FDD DTCH test loop is closed by sending the CLOSE_FDD_DTCH_LOOP_ACK message to the SS.

Perform the transmitter DTX testing.

The SS sends the OPEN_FDD_DTCH_LOOP message to the MS to open the FDD DTCH test loop.

8 Message definitions and contents

[Editor's note: The message type values have to be reviewed. If same protocol discriminator value will be used as for test messages in GSM ("1111") then it should be considered to define different message type values than used in GSM to avoid unexpected behaviour for 3G/GSM dula-system terminals. See GSM 04.14 for used message types in GSM.]

In this clause, only Layer 3 protocol messages are described. Underlying protocols are described in clause 9.

NOTE 1: A message received with skip indicator different from 0 will be ignored.

NOTE 2: For general definition of Layer 3 message format see TS 24.007 subclause 11.

8.1 Timer values

TT01: To be started when a CLOSE_FDD_DTCH_LOOP_CMD is sent. To be stopped when the corresponding CLOSE_FDD_DTCH_LOOP_ACK is received.

Recommended value: [2.5 seconds].

8.2 CLOSE_FDD_DTCH_LOOP_CMD

This message is only sent in the direction SS to MS.

Information Element	Reference	Presence	Format	Length
Protocol discriminator	[] TS 24.007, 11.2.3.1.1	M	V	½
Skip indicator	[] TS 24.007, 11.2.3.1.2	M	V	½
Message type		M	V	1

where message type is:

8	7	6	5	4	3	2	1	bit no.
0	0	0	0	0	0	0	0	octet 1

8.3 CLOSE_FDD_DTCH_LOOP_ACK

This message is only sent in the direction MS to SS.

Information Element	Reference	Presence	Format	Length
Protocol discriminator	[] TS 24.007, 11.2.3.1.1	M	V	½
Skip indicator	[] TS 24.007, 11.2.3.1.2	M	V	½
Message type		M	V	1

where message type is:

8	7	6	5	4	3	2	1	bit no.
0	0	0	0	0	0	0	1	Octet 1

8.4 OPEN_FDD_DTCH_LOOP

This message is only sent in the direction SS to MS

Information Element	Reference	Presence	Format	Length
Protocol discriminator	[] TS 24.007, 11.2.3.1.1	M	V	½
Skip indicator	[] TS 24.007, 11.2.3.1.2	M	V	½
Message type		M	V	1
Acknowledge		O	TV	1

where message type is:

8	7	6	5	4	3	2	1	Bit no.
0	0	0	0	0	1	1	0	Octet 1

where Acknowledge Information Element Identifier is:

8	7	6	5	4	3	2	1	Bit no.
1	0	0	0					Octet 1

and the Acknowledge Information Element contents are:

				4	3	2	1	Bit no.
				0 spare	0 spare	0 spare	1	Octet 1

8.5 ENABLE_CLOSED_LOOP_PWR_CTRL_CMD

[TBD]

8.6 DISABLE_CLOSED_LOOP_PWR_CTRL_CMD

[TBD]

8.7 ENABLE_CLOSED_LOOP_PWR_CTRL_ACK

[TBD]

8.8 DISABLE_CLOSED_LOOP_PWR_CTRL_ACK

[TBD]

8.9 TX_CARRIER_ON_CMD

[Editor's note: The need for the TX (transmitter) carrier on/off command is for further study]

[TBD]

8.10 TX_CARRIER_OFF_CMD

[Editor's note: The need for the TX (transmitter) carrier on/off command is for further study]

[TBD]

8.11 TX_CARRIER_ON_ACK

[Editor's note: The need for the TX (transmitter) carrier on/off command is for further study]

[TBD]

8.12 TX_CARRIER_OFF_ACK

[Editor's note: The need for the TX (transmitter) carrier on/off command is for further study]

[TBD]

9 Underlying protocol and physical test interface

[TBD]

[Editor's Note : Based on common measurement channel specification, this clause should describe or refer :

- Layer2 specification : Protocol, SAPI, etc.
- Layer1 specification : Channel type, SAPI, etc.

The above layer1/2 specification is assumed as common between CC/MM/RR protocol.]

10 Electrical Man Machine Interface (EMMI)

[TBD]

[Editor's Note: In GSM a special interface called Electrical Man Machine Interface (EMMI) is specified to provide for automatically registration of the status, indications and performance of the MS. The EMMI is a half duplex communication link between the SS and the MS. It is also possible to simulate actions normally made by the user on the keyboard of the MS.

In GSM the EMMI is optional to the MS and mandatory to the SS

The need for an EMMI to be part of the MS WCDMA specifications need to be investigated.

]

11 Digital audio interface (DAI)

[TBD]

[Editor's Note: In GSM a special interface is required in order to perform the bit exact test of the speech coder/decoder and to test the Sound Loudness Rating (SLR) and Receiver Loudness Rating (RLR) performance of the analogue and acoustic devices. It is used to insert and extract speech data in both the transmit and receive directions. The interruption of the normal speech data paths can be commanded either by a layer 3 message over the air interface or by special control lines in the test interface. The MS need react to only one of these command methods. The manufacturer shall state which method is to be used.

For GSM an alternative method is under investigation using the radio interface to test the acoustical performance. It should be up to the manufacturer to decide if the DAI or the air interface is to be used.

]

12 UICC/ME test interface

12.1 General description

A special interface is required in order to perform the tests of the UICC/ME interface.

12.2 Formal aspects

It shall be possible to connect the UICC/USIM simulator to the ME. If an adapter is to be used, the manufacturer of the ME shall provide it.

When using the UICC/USIM simulator, the ME does not necessarily conform to all RF requirements.

When the UICC/USIM simulator is connected the ME shall be able to correctly send and receive on a DTCH and associated channels under ideal radio conditions.

12.3 Hardware and logical aspects of the interface

The signals on this interface are specified in [] TS 31.101.

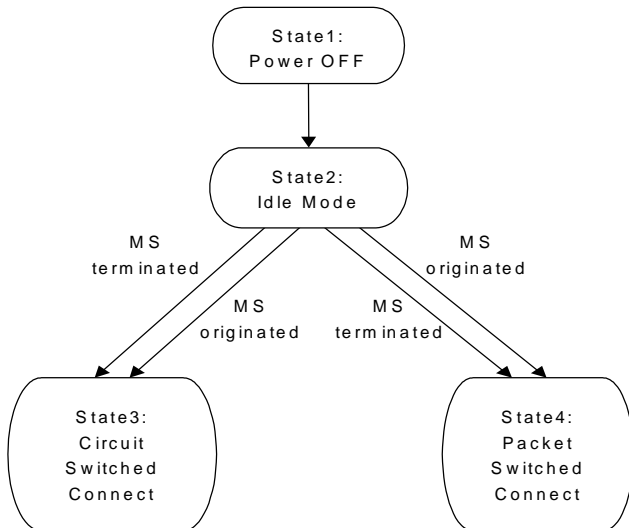
12.4 Mechanical characteristics of the interface

The mechanical interface is specified in [] TS 31.101.

Annex A (normative): Generic call set up procedures

A.1 Generic set up procedures

A.1.1 Hierarchical Manner



In this sub clause, the states of the MS for the test are defined

		RRC	CC	MM
State1	Power OFF	----	null	detached
State2	Idle Mode	Idle	null	idle
State3	Circuit Switched Connect	connected	active	connected
State4	Packet Switched Connect	connected	active	connected

A.1.2 Registration of MS

A.1.2.1 Initial condition

System Simulator:

- 1 cell, default parameters.

Mobile Station:

- The MS shall be operated under normal test conditions.
- - The special Test-SIM shall be inserted.

A.1.2.2 Definition of system information messages

[Editor's Note: If this subscribe's contents are written in 5.2 Default parametors, this subscribe will be delated.]

A.1.2.3 Procedure

Registration of MS for SS shall be established under ideal radio conditions:

Step	Direction		Message	Comments
	MS	SS		
1	<--		SYSTEM INFORMATION (BCCH)	NW Broadcast
2	-->		RRC CONNECTION REQUEST (CCCH)	RRC
3	<--		RRC CONNECTION SETUP (CCCH)	RRC
4	-->		UE CAPABILITY INFORMATION (DCCH)	RRC
5	<--		UE CAPABILITY INFORMATION CONFIRM (DCCH)	RRC
6	-->		LOCATION UPDATING REQUEST	MM
7	<--		AUTHENTICATION REQUEST	MM
8	-->		AUTHENTICATION RESPONSE	MM
9	<-- <FFS>		<i>CIPHER MODE COMMAND</i> <FFS>	RRC <FFS>
10	--> <FFS>		<i>CIPHER MODE COMPLETE</i> <FFS>	RRC <FFS>
11	<--		LOCATION UPDATING ACCEPT	MM
12	-->		TMSI RELOCATION COMPLETE	MM
13	<--		RRC CONNECTION RELEASE	RRC
14	-->		RRC CONNECTION RELEASE COMPLETE	RRC

A.1.2.4 Specific message contents

SYSTEM INFORMATION (BCCH) to the MS

Information Element	Value/remark

RRC CONNECTION SETUP (CCCH) to the MS

Information Element	Value/remark

UE CAPABILITY INFORMATION CONFIRM (DCCH) to the MS

Information Element	Value/remark

AUTHENTICATION REQUEST to the MS

Information Element	Value/remark

CIPHER MODE COMMAND to the MS <FFS>

Information Element	Value/remark

LOCATION UPDATING ACCEPT to the MS

Information Element	Value/remark

RRC CONNECTING RELEASE COMPLETE to the MS

Information Element	Value/remark

A.1.3 Call setup

In the test procedures described in this EN, unless otherwise stated in the test description, the Mobile Terminating Speech call set-up procedure shall be as described in this subclause.

A.1.3.1 Generic call set up procedure for mobile terminating circuit switched calls

A.1.3.1.1 Initial conditions

System Simulator:

1 cell, default parameters.

Mobile Station:

- The MS shall be operated under normal test conditions.
- The special Test-SIM shall be inserted.

A.1.3.1.2 Definition of system information messages

A.1.3.1.3 Procedure

Registration of MS for SS shall be established under ideal radio conditions:

Step	Direction		Message	Comments
	MS	SS		
1	<--		SYSTEM INFORMATION (BCCH)	Broadcast
2	<--		PAGING (PCCH)	Paging
3	-->		RRC CONNECTION REQUEST (CCCH)	RRC
4	<--		RRC CONNECTION SETUP (CCCH)	RRC
5	-->		UE CAPABILITY INFORMATION (DCCH)	RRC
6	<--		UE CAPABILITY INFORMATION CONFIRM (DCCH)	RRC
7	-->		PAGING RESPONSE	MM
8	<--		AUTHENTICATION REQUEST	MM
9	-->		AUTHENTICATION RESPONSE	MM
10	<--<FFS>		CIPHER MODE COMMAND <FFS>	RRC <FFS>
11	--><FFS>		CIPHER MODE COMPLETE <FFS>	RRC <FFS>
12	<--		SET UP	CC
13	-->		CALL CONFIRMED	CC
14	<--		RADIO ACCESS BEARER SETUP	RRC RAB SETUP
15	-->		RADIO ACCESS BEARER SETUP COMPLETE	RRC
16	-->		ALERTING	CC
17	-->		CONNECT	CC
18	<--		CONNECT ACKNOWLEDGE	CC

A.1.3.1.4 Specific message contents

SYSTEM INFO (BCCH) to the MS

Information Element	Value/remark

PAGING (PCCH) to the MS

Information Element	Value/remark

RRC CONNECTION SETUP (CCCH) to the MS

Information Element	Value/remark

UE CAPABILITY INFORMATION CONFIRM (DCCH) to the MS

Information Element	Value/remark

AUTHENTICATION REQUEST to the MS

Information Element	Value/remark

CIPHER MODE COMMAND to the MS

Information Element	Value/remark

SET UP to the MS

Information Element	Value/remark

RADIO ACCESS BEARER SETUP to the MS

Information Element	Value/remark

CONNECT ACKNOWLEDGE to the MS

Information Element	Value/remark

A.1.3.2 Generic call set-up procedure for mobile originating circuit switched calls

A.1.3.2.1 Initial conditions

System Simulator:

- 1 cell, default parameters.

Mobile Station:

- The MS shall be operated under normal test conditions.
- The special Test-SIM shall be inserted.

A.1.3.2.2 Definition of system information messages

[Editor's Note: If this subscribe's contents are written in 5.2 Default parametors, this subscribe will be delated.]

A.1.3.2.3 Procedure

Registration of MS for SS shall be established under ideal radio conditions:

Step	Direction		Message	Comments
	MS	SS		
1	<--		SYSTEM INFORMATION (BCCH)	Broadcast
2	-->		RRC CONNECTION REQUEST (CCCH)	RRC
3	<--		RRC CONNECTION SETUP (CCCH)	RRC
4	-->		UE CAPABILITY INFORMATION (DCCH)	RRC
5	<--		UE CAPABILITY INFORMATION CONFIRM (DCCH)	RRC
6	-->		PAGING RESPONSE	MM
7	<--		AUTHENTICATION REQUEST	MM
8	-->		AUTHENTICATION RESPONSE	MM
9	<--<FFS>		CIPHER MODE COMMAND <FFS>	RRC <FFS>
10	--><FFS>		CIPHER MODE COMPLETE <FFS>	RRC <FFS>
11	-->		SET UP	CC
12	<--		CALL PROC	CC
13	<--		RADIO ACCESS BEARER SETUP	RRC RAB SETUP
14	-->		RADIO ACCESS BEARER SETUP COMPLETE	RRC
15	<--		ALERTING	CC
16	<--		CONNECT	CC
17	-->		CONNECT ACKNOWLEDGE	CC

A.1.3.2.4 Specific message contents

SYSTEM INFORMATION (BCCH) to the MS

Information Element	Value/remark

RRC CONNECTION SETUP (CCCH) to the MS

Information Element	Value/remark

UE CAPABILITY INFORMATION CONFIRM (DCCH) to the MS

Information Element	Value/remark

AUTHENTICATION REQUEST to the MS

Information Element	Value/remark

CIPHER MODE COMMAND to the MS

Information Element	Value/remark

SET UP to the MS

Information Element	Value/remark

RADIO ACCESS BEARER SETUP to the MS

Information Element	Value/remark

CONNECT ACKNOWLEDGE to the MS

Information Element	Value/remark

A.1.4 Session setup

A.1.4.1 Initial conditions

A.1.4.2 Definition of system information messages

A.1.4.3 Procedure

A.1.4.4 Specific message contents

History

Document history		
V0.0.0	1999-02	Initial document. The contents are given from ARIB "Specification of Mobile Station for 3G Mobile System" (Ver.1.0-1.0)
V0.0.1	1999-04	Change requests agreed by TSG-T1 RF/SWG
V0.1.0	1999-04-15	Changes as agreed by TSG-T1 #2 meeting.
V0.2.0	1999-05-27	Changes as agreed by TSG-T1 RF/SWG and TSG-T1 SIG/SWG according to TSG-T1R#4(99)041 & TSG-T1S#2(99)017.
V0.2.1	1999-08-26	Change of document number from iTS-T1.001 to TS 34.109. Scope expanded to cover both FDD and TDD. Same content as v0.2.0.
V0.2.2	1999-08-27	Editorial changes in the format.
V0.3.0	1999-09-16	Changes as agreed by TSG-T1 according to TSG-T1#4(99)109.
V0.3.1	1999-09-28	Editorial changes received by T1 e-mail reflector.
V1.0.0	1999-10-07	Presented at TSG T#5 for information
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