

**TSG RAN Meeting #14**

**RP-010784**

**Kyoto, Japan, 11 - 14 December 2001**

**Title: CRs (R'99 and Rel-4 Category A) to TS 25.142**

**Source: TSG RAN WG4**

**Agenda Item: 8.4.3**

<b>RAN4 Tdoc</b>	<b>Spec</b>	<b>CR</b>	<b>Title</b>	<b>Cat</b>	<b>Phase</b>	<b>Curr Ver</b>	<b>New Ver</b>
R4-011448	25.142	87	BS Performance Requirements for 12.2 kbps, 64 kbps, 144 kbps and 384 kbps	F	Rel99	3.7.0	3.8.0
R4-011587	25.142	88	BS Performance Requirements for 12.2 kbps, 64 kbps, 144 kbps and 384 kbps	A	Rel-4	4.2.0	4.3.0

**CHANGE REQUEST**

⌘ **25.142 CR 87** ⌘ ev **-** ⌘ Current version: **3.7.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** ⌘ (U)SIM  ME/UE  Radio Access Network  Core Network

<b>Title:</b>	⌘ BS Performance Requirements for 12.2 kbps, 64 kbps, 144 kbps and 384 kbps
<b>Source:</b>	⌘ RAN WG4
<b>Work item code:</b>	⌘ <input type="text"/> <b>Date:</b> ⌘ 12 Nov. 2001
<b>Category:</b>	⌘ <b>F</b> <b>Release:</b> ⌘ Rel99
<p>Use <u>one</u> of the following categories:</p> <p><b>F</b> (correction)  <b>A</b> (corresponds to a correction in an earlier release)  <b>B</b> (addition of feature),  <b>C</b> (functional modification of feature)  <b>D</b> (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a>.</p>	
<p>Use <u>one</u> of the following releases:</p> <p><b>2</b> (GSM Phase 2)  <b>R96</b> (Release 1996)  <b>R97</b> (Release 1997)  <b>R98</b> (Release 1998)  <b>R99</b> (Release 1999)  <b>REL-4</b> (Release 4)  <b>REL-5</b> (Release 5)</p>	

<b>Reason for change:</b>	⌘ To bring into alignment with changes to 25.105: Existing performance requirements do not take into account cell parameter cycling, which is mandatory.
<b>Summary of change:</b>	⌘ BS Performance Requirements in Section 8 are changed.
Consequences if ⌘[H15] not approved:	<p>The requirements in 25.142 would be inconsistent with the approved changed requirements in 25.105.</p> <p>Isolated Impact Analysis:  Correction to a function where the specification was:  Containing some contradictions relative to another previously updated specification (25.105).  Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.</p>

<b>Clauses affected:</b>	⌘ 8.2.1, 8.3.1, 8.3.2, 8.3.3									
<b>Other specs affected:</b>	<table border="0"> <tr> <td><input type="checkbox"/></td> <td>Other core specifications</td> <td>⌘ <input type="text"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td>Test specifications</td> <td></td> </tr> <tr> <td><input type="checkbox"/></td> <td>O&amp;M Specifications</td> <td></td> </tr> </table>	<input type="checkbox"/>	Other core specifications	⌘ <input type="text"/>	<input type="checkbox"/>	Test specifications		<input type="checkbox"/>	O&M Specifications	
<input type="checkbox"/>	Other core specifications	⌘ <input type="text"/>								
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<b>Other comments:</b>	⌘ <input type="text"/>									

**How to create CRs using this form:**

Comprehensive information and tips about how to create CRs can be found at: [http://www.3gpp.org/3G\\_Specs/CRs.htm](http://www.3gpp.org/3G_Specs/CRs.htm). Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

## 8.2 Demodulation in static propagation conditions

### 8.2.1 Demodulation of DCH

#### 8.2.1.1 Definition and applicability

The performance requirement of DCH in static propagation conditions is determined by the maximum Block Error Ratio (BLER) allowed when the receiver input signal is at a specified  $\hat{I}_{or}/I_{oc}$  limit. The BLER is calculated for each of the measurement channels supported by the base station.

The requirements in this subclause shall apply to base stations intended for general-purpose applications.

#### 8.2.1.2 Minimum Requirements

For the parameters specified in table 8.2, the BLER should not exceed the piece-wise linear BLER curve specified in table 8.3. These requirements are applicable for TFCS size 16.

**Table 8.2: Parameters in static propagation conditions**

Parameters	Unit	Test 1	Test 2	Test 3	Test 4
Number of DPCH <sub>o</sub>		6	4	0	0
$\frac{DPCH_o - E_c}{I_{or}}$	dB	-9	-9,5	-	-
$I_{oc}$	dBm/3,84 MHz	-89			
Cell Parameter*		0,1			
DPCH Channelization Codes*	C(k,Q)	C(1,8)	$\frac{C(1,4)}{C(5,16)}$	$\frac{C(1,2)}{C(9,16)}$	C(1,2)
DPCH <sub>o</sub> Channelization Codes*	C(k,Q)	C(i,16) 3 ≤ i ≤ 8	C(i,16) 6 ≤ i ≤ 9	-	-
Information Data Rate	kbps	12,2	64	144	384

**\*Note: Refer to TS 25.223 for definition of channelization codes and cell parameter.**

**Table 8.3: Performance requirements in AWGN channel.**

Test Number	$\frac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	-2,0-1,9	10 <sup>-2</sup>
2	-0,4-0,3	10 <sup>-1</sup>
	-0,10,0	10 <sup>-2</sup>
3	-0,20,0	10 <sup>-1</sup>
	0,10,2	10 <sup>-2</sup>
4	-0,8-0,5	10 <sup>-1</sup>
	-0,6-0,3	10 <sup>-2</sup>

The normative reference for this requirement is TS 25.105 [1] subclause 8.2.1.

#### 8.2.1.3 Test purpose

The test purpose is to verify the ability of the BS to receive a prescribed test signal under static propagation conditions with a BLER not exceeding a specified limit. Within the wanted channel, intracell interference sources as well as an additional intercell interference source are taken into account. Therefore, this test – as all other tests in clause 8 - mainly checks the ability of the signal processing part of the receiver to extract the wanted signal from the interfered-with input signal, whereas the tests in clause 7 concentrate on the receiver RF part.

### 8.2.1.4 Method of test

#### 8.2.1.4.1 Initial conditions

Test environment: normal; see subclause 5.9.1.

RF channels to be tested: B, M and T; see subclause 5.3.

Connect the BS tester (UE simulator) generating the wanted signal and a set of interference generators to both BS antenna connectors for diversity reception via a combining network. The set of interference generators comprises a number of CDMA generators, each representing an individual intracell interferer (subsequently called DPCH<sub>0</sub> generators), and an additional band-limited white noise source, simulating interference from other cells. Each DPCH<sub>0</sub> generator shall produce an interfering signal that is equivalent to a valid UTRA TDD signal with spreading factor 16, using the same time slot(s) than the wanted signal and applying the same cell-specific scrambling code. The number of the DPCH<sub>0</sub> generators used in each test is given in table 8.2.

#### 8.2.1.4.2 Procedure

- (1) Adjust the power of the band-limited white noise source in such a way that its power spectral density measured at the BS antenna connector takes on the value  $I_{oc}$  as specified in table 8.2.
- (2) For a given test defined by the information data rate and the BLER objective, set the power of each DPCH<sub>0</sub> measured at the BS antenna connector during the active time slots to the value specified in table 8.4.
- (3) Set up a call between the BS tester generating the wanted signal and the BS. The characteristics of the call shall be configured according to the information data rate to be provided and the corresponding UL reference measurement channel defined in Annex A. Depending on the information data rate, the UL reference measurement channel makes use of one or two Dedicated Physical Channels (DPCH<sub>1</sub> and DPCH<sub>2</sub>) with different spreading factors SF. The power(s) of DPCH<sub>1</sub> and DPCH<sub>2</sub> (if applicable) measured at the BS antenna connector during the active time slots shall be set to the value(s) given in table 8.4.
- (4) Measure the BLER of the wanted signal at the BS receiver.

**Table 8.4: Parameters of DPCH<sub>0</sub> and the wanted signal**

Test Number	BLER objective	Number of DPCH <sub>0</sub>	Power of each DPCH <sub>0</sub> measured at the BS antenna connector [dBm]	Parameters of the wanted signal		
				DPCH	SF	Power measured at the BS antenna connector [dBm]
1	$10^{-2}$	6	-100,0-99,9	DPCH <sub>1</sub>	8	-97,0-96,9
2	$10^{-1}$	4	-98,9 -98,8	DPCH <sub>1</sub>	16	-98,9-98,8
				DPCH <sub>2</sub>	4	-92,9-92,8
	$10^{-2}$	4	-98,6-98,5	DPCH <sub>1</sub>	16	-98,6-98,5
				DPCH <sub>2</sub>	4	-92,6-92,5
3	$10^{-1}$	0	-	DPCH <sub>1</sub>	16	-98,7-98,5
				DPCH <sub>2</sub>	2	-89,7-89,5
	$10^{-2}$	0	-	DPCH <sub>1</sub>	16	-98,4-98,3
				DPCH <sub>2</sub>	2	-89,4-89,3
4	$10^{-1}$	0	-	DPCH <sub>1</sub>	2	-89,8-89,5
	$10^{-2}$	0	-	DPCH <sub>1</sub>	2	-89,6-89,3

### 8.2.1.5 Test Requirements

The BLER measured according to subclause 8.2.1.4.2 shall not exceed the limits specified in table 8.3.

NOTE: If the above Test Requirement differs from the Minimum Requirement, then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in subclause 5.11 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in Annex D.

## 8.3 Demodulation of DCH in multipath fading conditions

### 8.3.1 Multipath fading Case 1

#### 8.3.1.1 Definition and applicability

The performance requirement of DCH in multipath fading Case 1 is determined by the maximum Block Error Ratio (BLER) allowed when the receiver input signal is at a specified  $\hat{I}_{or}/I_{oc}$  limit. The BLER is calculated for each of the measurement channels supported by the base station.

The requirements in this subclause shall apply to base stations intended for general-purpose applications.

#### 8.3.1.2 Minimum Requirements

For the parameters specified in table 8.5, the BLER should not exceed the piece-wise linear BLER curve specified in table 8.6. These requirements are applicable for TFCS size 16.

**Table 8.5: Parameters in multipath Case 1 channel**

Parameters	Unit	Test 1	Test 2	Test 3	Test 4
Number of DPCH <sub>o</sub>		6	4	0	0
$\frac{DPCH_o - E_c}{I_{or}}$	dB	-9	-9,5	-	-
$I_{oc}$	dBm/3,84 MHz	-89			
Cell Parameter*		0,1			
DPCH Channelization Codes*	<u>C(k,Q)</u>	<u>C(1,8)</u>	<u>C(1,4)</u> <u>C(5,16)</u>	<u>C(1,2)</u> <u>C(9,16)</u>	<u>C(1,2)</u>
DPCH <sub>o</sub> Channelization Codes*	<u>C(k,Q)</u>	<u>C(i,16) 3 ≤ i ≤ 8</u>	<u>C(i,16) 6 ≤ i ≤ 9</u>	-	-
Information Data Rate	kbps	12,2	64	144	384

**\*Note: Refer to TS 25.223 for definition of channelization codes and cell parameter.**

**Table 8.6: Performance requirements in multipath Case 1 channel.**

Test Number	$\frac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	<u>6,56,3</u>	$10^{-2}$
	<u>5,5</u>	$10^{-1}$
2	<u>9,89,4</u>	$10^{-2}$
	<u>5,55,6</u>	$10^{-1}$
3	<u>9,89,4</u>	$10^{-2}$
	<u>5,15,5</u>	$10^{-1}$
4	<u>9,58,7</u>	$10^{-2}$

The normative reference for this requirement is TS 25.105 [1] subclause 8.3.1.

#### 8.3.1.3 Test purpose

The test purpose is to verify the ability of the BS to receive a prescribed test signal under defined propagation conditions (multipath fading Case 1) with a BLER not exceeding a specified limit. Within the wanted channel, independent intracell interference sources as well as an additional intercell interference source are taken into account. Therefore, this test – as all other tests in clause 8 - mainly checks the ability of the signal processing part of the receiver to extract the wanted signal from the distorted and interfered-with input signal, whereas the tests in clause 7 concentrate on the receiver RF part.

### 8.3.1.4 Method of test

#### 8.3.1.4.1 Initial conditions

Test environment: normal; see subclause 5.9.1.

RF channels to be tested: B, M and T; see subclause 5.3.

- (1) Connect the BS tester (UE simulator) generating the wanted signal and a set of interference generators to both BS antenna connectors for diversity reception via a combining network. The set of interference generators comprises a number of CDMA generators, each representing an individual intracell interferer (subsequently called DPCH<sub>0</sub> generators), and an additional band-limited white noise source, simulating interference from other cells. Each DPCH<sub>0</sub> generator shall produce an interfering signal that is equivalent to a valid UTRA TDD signal with spreading factor 16, using the same time slot(s) than the wanted signal and applying the same cell-specific scrambling code. The number of the DPCH<sub>0</sub> generators used in each test is given in table 8.5.
- (2) The wanted signal produced by the BS tester and the interfering signals produced by the DPCH<sub>0</sub> generators are individually passed through independent Multipath Fading Simulators (MFS) before entering the combining network. Each MFS shall be configured to simulate multipath fading Case 1.

#### 8.3.1.4.2 Procedure

- (1) Adjust the power of the band-limited white noise source in such a way that its power spectral density measured at the BS antenna connector takes on the value  $I_{oc}$  as specified in table 8.5.
- (2) For a given test defined by the information data rate and the BLER objective, set the power of each DPCH<sub>0</sub> measured at the BS antenna connector during the active time slots to the value specified in table 8.7.
- (3) Set up a call between the BS tester generating the wanted signal and the BS. The characteristics of the call shall be configured according to the information data rate to be provided and the corresponding UL reference measurement channel defined in Annex A. Depending on the information data rate, the UL reference measurement channel makes use of one or two Dedicated Physical Channels (DPCH<sub>1</sub> and DPCH<sub>2</sub>) with different spreading factors SF. The power(s) of DPCH<sub>1</sub> and DPCH<sub>2</sub> (if applicable) measured at the BS antenna connector during the active time slots shall be set to the value(s) given in table 8.7.
- (4) Measure the BLER of the wanted signal at the BS receiver.

**Table 8.7: Parameters of DPCH<sub>0</sub> and the wanted signal**

Test Number	BLER objective	Number of DPCH <sub>0</sub>	Power of each DPCH <sub>0</sub> measured at the BS antenna connector [dBm]	Parameters of the wanted signal		
				DPCH	SF	Power measured at the BS antenna connector [dBm]
1	$10^{-2}$	6	<u>-91,5</u> -94,7	DPCH <sub>1</sub>	8	<u>-88,5</u> -88,7
2	$10^{-1}$	4	<u>-93,0</u> -93	DPCH <sub>1</sub>	16	<u>-93,0</u> -93
				DPCH <sub>2</sub>	4	<u>-87,0</u> -87
	$10^{-2}$	4	<u>-88,7</u> -89,4	DPCH <sub>1</sub>	16	<u>-88,7</u> -89,4
				DPCH <sub>2</sub>	4	<u>-82,7</u> -83,4
3	$10^{-1}$	0	-	DPCH <sub>1</sub>	16	<u>-93,0</u> -92,9
				DPCH <sub>2</sub>	2	<u>-84,0</u> -83,9
	$10^{-2}$	0	-	DPCH <sub>1</sub>	16	<u>-88,7</u> -89,4
				DPCH <sub>2</sub>	2	<u>-79,7</u> -80,4
4	$10^{-1}$	0	-	DPCH <sub>1</sub>	2	<u>-83,9</u> -83,5
	$10^{-2}$	0	-	DPCH <sub>1</sub>	2	<u>-79,5</u> -80,3

### 8.3.1.5 Test Requirements

The BLER measured according to subclause 8.3.1.4.2 shall not exceed the limits specified in table 8.6.

NOTE: If the above Test Requirement differs from the Minimum Requirement, then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in subclause 5.11 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in Annex D.

## 8.3.2 Multipath fading Case 2

### 8.3.2.1 Definition and applicability

The performance requirement of DCH in multipath fading Case 2 is determined by the maximum Block Error Ratio (BLER) allowed when the receiver input signal is at a specified  $\hat{I}_{or}/I_{oc}$  limit. The BLER is calculated for each of the measurement channels supported by the base station.

The requirements in this subclause shall apply to base stations intended for general-purpose applications.

### 8.3.2.2 Minimum Requirements

For the parameters specified in table 8.8, the BLER should not exceed the piece-wise linear BLER curve specified in table 8.8. These requirements are applicable for TFCS size 16.

**Table 8.8: Parameters in multipath Case 2 channel**

Parameters	Unit	Test 1	Test 2	Test 3	Test 4
Number of DPCH <sub>o</sub>		2	0	0	0
$\frac{DPCH_o - E_c}{I_{or}}$	dB	-6	-	-	-
$I_{oc}$	dBm/3,84 MHz	-89			
Cell Parameter*		0,1			
DPCH Channelization Codes*	C(k,Q)	C(1,8)	C(1,4) C(5,16)	C(1,2) C(9,16)	C(1,2)
DPCH <sub>o</sub> Channelization Codes*	C(k,Q)	C(i,16) 3 ≤ i ≤ 4	-	-	-
Information Data Rate	kbps	12,2	64	144	384

**\*Note: Refer to TS 25.223 for definition of channelization codes and cell parameter.**

**Table 8.9: Performance requirements in multipath Case 2 channel.**

Test Number	$\frac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	-0,40,4	10 <sup>-2</sup>
2	0,20,4	10 <sup>-1</sup>
	2,52,8	10 <sup>-2</sup>
3	3,6	10 <sup>-1</sup>
	6,0	10 <sup>-2</sup>
4	2,83,0	10 <sup>-1</sup>
	5,25,4	10 <sup>-2</sup>

The normative reference for this requirement is TS 25.105 [1] subclause 8.3.2.

### 8.3.2.3 Test purpose

The test purpose is to verify the ability of the BS to receive a prescribed test signal under defined propagation conditions (multipath fading Case 2) with a BLER not exceeding a specified limit. Within the wanted channel, independent intracell interference sources as well as an additional intercell interference source are taken into account. Therefore, this test – as all other tests in clause 8 - mainly checks the ability of the signal processing part of the receiver



to extract the wanted signal from the distorted and interfered-with input signal, whereas the tests in clause 7 concentrate on the receiver RF part.

### 8.3.2.4 Method of test

#### 8.3.2.4.1 Initial conditions

Test environment: normal; see subclause 5.9.1.

RF channels to be tested: B, M and T; see subclause 5.3.

- (1) Connect the BS tester (UE simulator) generating the wanted signal and a set of interference generators to both BS antenna connectors for diversity reception via a combining network. The set of interference generators comprises a number of CDMA generators, each representing an individual intracell interferer (subsequently called DPCH<sub>0</sub> generators), and an additional band-limited white noise source, simulating interference from other cells. Each DPCH<sub>0</sub> generator shall produce an interfering signal that is equivalent to a valid UTRA TDD signal with spreading factor 16, using the same time slot(s) than the wanted signal and applying the same cell-specific scrambling code. The number of the DPCH<sub>0</sub> generators used in each test is given in table 8.8.
- (2) The wanted signal produced by the BS tester and the interfering signals produced by the DPCH<sub>0</sub> generators are individually passed through independent Multipath Fading Simulators (MFS) before entering the combining network. Each MFS shall be configured to simulate multipath fading Case 2.

#### 8.3.2.4.2 Procedure

- (1) Adjust the power of the band-limited white noise source in such a way that its power spectral density measured at the BS antenna connector takes on the value I<sub>oc</sub> as specified in table 8.8.
- (2) For a given test defined by the information data rate and the BLER objective, set the power of each DPCH<sub>0</sub> measured at the BS antenna connector during the active time slots to the value specified in table 8.101.
- (3) Set up a call between the BS tester generating the wanted signal and the BS. The characteristics of the call shall be configured according to the information data rate to be provided and the corresponding UL reference measurement channel defined in Annex A. Depending on the information data rate, the UL reference measurement channel makes use of one or two Dedicated Physical Channels (DPCH<sub>1</sub> and DPCH<sub>2</sub>) with different spreading factors SF. The power(s) of DPCH<sub>1</sub> and DPCH<sub>2</sub> (if applicable) measured at the BS antenna connector during the active time slots shall be set to the value(s) given in table 8.10.
- (4) Measure the BLER of the wanted signal at the BS receiver.

**Table 8.10: Parameters of DPCH<sub>0</sub> and the wanted signal**

Test Number	BLER objective	Number of DPCH <sub>0</sub>	Power of each DPCH <sub>0</sub> measured at the BS antenna connector [dBm]	Parameters of the wanted signal		
				DPCH	SF	Power measured at the BS antenna connector [dBm]
1	10 <sup>-2</sup>	2	<del>-95,4</del> -94,9	DPCH <sub>1</sub>	8	<del>-92,4</del> -91,9
2	10 <sup>-1</sup>	0	-	DPCH <sub>1</sub>	16	<del>-95,8</del> -95,6
				DPCH <sub>2</sub>	4	<del>-89,8</del> -89,6
	10 <sup>-2</sup>	0	-	DPCH <sub>1</sub>	16	<del>-93,5</del> -93,2
				DPCH <sub>2</sub>	4	<del>-87,5</del> -87,2
3	10 <sup>-1</sup>	0	-	DPCH <sub>1</sub>	16	-94,9
				DPCH <sub>2</sub>	2	-85,9
	10 <sup>-2</sup>	0	-	DPCH <sub>1</sub>	16	<del>-92,5</del> -92,5
				DPCH <sub>2</sub>	2	<del>-83,5</del> -83,5
4	10 <sup>-1</sup>	0	-	DPCH <sub>1</sub>	2	<del>-86,2</del> -86
	10 <sup>-2</sup>	0	-	DPCH <sub>1</sub>	2	<del>-83,8</del> -83,6

#### 8.3.2.5 Test Requirements

The BLER measured according to subclause 8.3.2.4.2 shall not exceed the limits specified in table 8.9.

NOTE: If the above Test Requirement differs from the Minimum Requirement, then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in subclause 5.11 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in Annex D.

### 8.3.3 Multipath fading Case 3

#### 8.3.3.1 Definition and applicability

The performance requirement of DCH in multipath fading Case 3 is determined by the maximum Block Error Ratio (BLER) allowed when the receiver input signal is at a specified  $\hat{I}_{or}/I_{oc}$  limit. The BLER is calculated for each of the measurement channels supported by the base station.

The requirements in this subclause shall apply to base stations intended for general-purpose applications.

#### 8.3.3.2 Minimum Requirements

For the parameters specified in table 8.11, the BLER should not exceed the piece-wise linear BLER curve specified in Table 8.12. These requirements are applicable for TFCS size 16.

**Table 8.11: Parameters in multipath Case 3 channel**

Parameters	Unit	Test 1	Test 2	Test 3	Test 4
Number of DPCH <sub>o</sub>		2	0	0	0
$\frac{DPCH_o - E_c}{I_{or}}$	dB	-6	-	-	-
$I_{oc}$	dBm/3,84 MHz	-89			
Cell Parameter*		0,1			
DPCH Channelization Codes*	C(k,Q)	C(1,8)	C(1,4) C(5,16)	C(1,2) C(9,16)	C(1,2)
DPCH <sub>o</sub> Channelization Codes*	C(k,Q)	C(i,16) 3 ≤ i ≤ 4	-	-	-
Information Data Rate	kbps	12,2	64	144	384

**\*Note: Refer to TS 25.223 for definition of channelization codes and cell parameter.**

**Table 8.12: Performance requirements in multipath Case 3 channel.**

Test Number	$\frac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	-0,1-0,6	10 <sup>-2</sup>
2	0,80,7	10 <sup>-1</sup>
	2,72,4	10 <sup>-2</sup>
	4,23,8	10 <sup>-3</sup>
3	4,53,9	10 <sup>-1</sup>
	6,35,9	10 <sup>-2</sup>
	8,07,3	10 <sup>-3</sup>
4	3,62,8	10 <sup>-1</sup>
	5,04,2	10 <sup>-2</sup>
	6,34,8	10 <sup>-3</sup>

The normative reference for this requirement is TS 25.105 [1] subclause 8.3.3.

#### 8.3.3.3 Test purpose

The test purpose is to verify the ability of the BS to receive a prescribed test signal under defined propagation conditions (multipath fading Case 3) with a BLER not exceeding a specified limit. Within the wanted channel, independent intracell interference sources as well as an additional intercell interference source are taken into account. Therefore, this test – as all other tests in clause 8 - mainly checks the ability of the signal processing part of the receiver

to extract the wanted signal from the distorted and interfered-with input signal, whereas the tests in clause 7 concentrate on the receiver RF part.

### 8.3.3.4 Method of test

#### 8.3.3.4.1 Initial conditions

Test environment: normal; see subclause 5.9.1.

RF channels to be tested: B, M and T; see subclause 5.3.

- (1) Connect the BS tester (UE simulator) generating the wanted signal and a set of interference generators to both BS antenna connectors for diversity reception via a combining network. The set of interference generators comprises a number of CDMA generators, each representing an individual intracell interferer (subsequently called DPCH<sub>0</sub> generators), and an additional band-limited white noise source, simulating interference from other cells. Each DPCH<sub>0</sub> generator shall produce an interfering signal that is equivalent to a valid UTRA TDD signal with spreading factor 16, using the same time slot(s) than the wanted signal and applying the same cell-specific scrambling code. The number of the DPCH<sub>0</sub> generators used in each test is given in table 8.11.
- (2) The wanted signal produced by the BS tester and the interfering signals produced by the DPCH<sub>0</sub> generators are individually passed through independent Multipath Fading Simulators (MFS) before entering the combining network. Each MFS shall be configured to simulate multipath fading Case 3.

#### 8.3.3.4.2 Procedure

- (1) Adjust the power of the band-limited white noise source in such a way that its power spectral density measured at the BS antenna connector takes on the value  $I_{oc}$  as specified in table 8.11.
- (2) For a given test defined by the information data rate and the BLER objective, set the power of each DPCH<sub>0</sub> measured at the BS antenna connector during the active time slots to the value specified in table 8.13.
- (3) Set up a call between the BS tester generating the wanted signal and the BS. The characteristics of the call shall be configured according to the information data rate to be provided and the corresponding UL reference measurement channel defined in Annex A. Depending on the information data rate, the UL reference measurement channel makes use of one or two Dedicated Physical Channels (DPCH<sub>1</sub> and DPCH<sub>2</sub>) with different spreading factors SF. The power(s) of DPCH<sub>1</sub> and DPCH<sub>2</sub> (if applicable) measured at the BS antenna connector during the active time slots shall be set to the value(s) given in table 8.131.
- (4) Measure the BLER of the wanted signal at the BS receiver.

**Table 8.13: Parameters of DPCH<sub>0</sub> and the wanted signal**

Test Number	BLER objective	Number of DPCH <sub>0</sub>	Power of each DPCH <sub>0</sub> measured at the BS antenna connector [dBm]	Parameters of the wanted signal		
				DPCH	SF	Power measured at the BS antenna connector [dBm]
1	$10^{-2}$	2	<del>-95,1</del> -95,6	DPCH <sub>1</sub>	8	<del>-92,1</del> -92,6
2	$10^{-1}$	0	-	DPCH <sub>1</sub>	16	<del>-95,2</del> -95,3
				DPCH <sub>2</sub>	4	<del>-89,2</del> -89,3
	$10^{-2}$	0	-	DPCH <sub>1</sub>	16	<del>-93,3</del> -93,6
				DPCH <sub>2</sub>	4	<del>-87,3</del> -87,6
$10^{-3}$	0	-	DPCH <sub>1</sub>	16	<del>-91,8</del> -92,2	
			DPCH <sub>2</sub>	4	<del>-85,8</del> -86,2	
3	$10^{-1}$	0	-	DPCH <sub>1</sub>	16	<del>-94,0</del> -94,6
				DPCH <sub>2</sub>	2	<del>-85,0</del> -85,6
	$10^{-2}$	0	-	DPCH <sub>1</sub>	16	<del>-92,2</del> -92,6
DPCH <sub>2</sub>				2	<del>-83,2</del> -83,6	
	$10^{-3}$	0	-	DPCH <sub>1</sub>	16	<del>-90,5</del> -91,2
				DPCH <sub>2</sub>	2	<del>-81,5</del> -82,2
4	$10^{-1}$	0	-	DPCH <sub>1</sub>	2	<del>-85,4</del> -86,2
	$10^{-2}$	0	-	DPCH <sub>1</sub>	2	<del>-84,0</del> -84,8
	$10^{-3}$	0	-	DPCH <sub>1</sub>	2	<del>-82,7</del> -84,2

### 8.3.3.5 Test Requirements

The BLER measured according to subclause 8.3.3.4.2 shall not exceed the limits specified in table 8.12.

NOTE: If the above Test Requirement differs from the Minimum Requirement, then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in subclause 5.11 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in Annex D.

**CHANGE REQUEST**

⌘ **25.142 CR 88** ⌘ ev **-** ⌘ Current version: **4.2.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** ⌘ (U)SIM  ME/UE  Radio Access Network  Core Network

<b>Title:</b>	⌘ BS Performance Requirements for 12.2 kbps, 64 kbps, 144 kbps and 384 kbps
<b>Source:</b>	⌘ RAN WG4
<b>Work item code:</b>	⌘ <input type="text"/> <b>Date:</b> ⌘ 14 Nov. 2001
<b>Category:</b>	⌘ <b>A</b> <b>Release:</b> ⌘ Rel-4
<p>Use <u>one</u> of the following categories:</p> <p><b>F</b> (correction)  <b>A</b> (corresponds to a correction in an earlier release)  <b>B</b> (addition of feature),  <b>C</b> (functional modification of feature)  <b>D</b> (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a>.</p>	
<p>Use <u>one</u> of the following releases:</p> <p><b>2</b> (GSM Phase 2)  <b>R96</b> (Release 1996)  <b>R97</b> (Release 1997)  <b>R98</b> (Release 1998)  <b>R99</b> (Release 1999)  <b>REL-4</b> (Release 4)  <b>REL-5</b> (Release 5)</p>	

<b>Reason for change:</b>	⌘ To bring into alignment with changes to 25.105: Existing performance requirements do not take into account cell parameter cycling, which is mandatory.
<b>Summary of change:</b>	⌘ 3,84 Mcps TDD option BS Performance Requirements in Section 8 are changed.
<b>Consequences if not approved:</b>	⌘ The requirements in 25.142 would be inconsistent with the approved changed requirements in 25.105.  Isolated Impact Analysis: Correction to a function where the specification was: <ul style="list-style-type: none"> <li>Containing some contradictions relative to another previously updated specification (25.105).</li> </ul> Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.

<b>Clauses affected:</b>	⌘ 8.2.1, 8.3.1, 8.3.2, 8.3.3
<b>Other specs affected:</b>	⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="text"/> <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications
<b>Other comments:</b>	⌘ <input type="text"/>

**How to create CRs using this form:**

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- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

## 8.2 Demodulation in static propagation conditions

### 8.2.1 Demodulation of DCH

#### 8.2.1.1 Definition and applicability

The performance requirement of DCH in static propagation conditions is determined by the maximum Block Error Ratio (BLER) allowed when the receiver input signal is at a specified  $\hat{I}_{or}/I_{oc}$  limit. The BLER is calculated for each of the measurement channels supported by the base station.

The requirements in this subclause shall apply to base stations intended for general-purpose applications.

#### 8.2.1.2 Minimum Requirements

##### 8.2.1.2.1 3,84 Mcps TDD option

For the parameters specified in table 8.2, the BLER should not exceed the piece-wise linear BLER curve specified in table 8.3. These requirements are applicable for TFCS size 16.

**Table 8.2: Parameters in static propagation conditions**

Parameters	Unit	Test 1	Test 2	Test 3	Test 4
Number of DPCH <sub>o</sub>		6	4	0	0
$\frac{DPCH_o - E_c}{I_{or}}$	DB	-9	-9,5	-	-
$I_{oc}$	dBm/3,84 MHz	-89			
Cell Parameter*		0,1			
DPCH Channelization Codes*	C(k,Q)	C(1,8)	C(1,4) C(5,16)	C(1,2) C(9,16)	C(1,2)
DPCH <sub>o</sub> Channelization Codes*	C(k,Q)	C(i,16) 3 ≤ i ≤ 8	C(i,16) 6 ≤ i ≤ 9	-	-
Information Data Rate	Kbps	12,2	64	144	384

**\*Note: Refer to TS 25.223 for definition of channelization codes and cell parameter.**

**Table 8.3: Performance requirements in AWGN channel.**

Test Number	$\frac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	<del>-2,0</del> -1,9	10 <sup>-2</sup>
2	<del>-0,4</del> -0,3	10 <sup>-1</sup>
	<del>-0,1</del> 0	10 <sup>-2</sup>
3	<del>-0,2</del> 0	10 <sup>-1</sup>
	0,1 <del>0,2</del>	10 <sup>-2</sup>
4	<del>-0,8</del> -0,5	10 <sup>-1</sup>
	<del>-0,6</del> -0,3	10 <sup>-2</sup>

The normative reference for this requirement is TS 25.105 [1] subclause 8.2.1.1.1.

<Next Changed Section>

## 8.2.1.4.2 Procedure

## 8.2.1.4.2.1 3,84 Mcps TDD option

- (1) Adjust the power of the band-limited white noise source in such a way that its power spectral density measured at the BS antenna connector takes on the value  $I_{oc}$  as specified in table 8.2.
- (2) For a given test defined by the information data rate and the BLER objective, set the power of each DPCH<sub>0</sub> measured at the BS antenna connector during the active time slots to the value specified in table 8.4.
- (3) Set up a call between the BS tester generating the wanted signal and the BS. The characteristics of the call shall be configured according to the information data rate to be provided and the corresponding UL reference measurement channel defined in Annex A. Depending on the information data rate, the UL reference measurement channel makes use of one or two Dedicated Physical Channels (DPCH<sub>1</sub> and DPCH<sub>2</sub>) with different spreading factors SF. The power(s) of DPCH<sub>1</sub> and DPCH<sub>2</sub> (if applicable) measured at the BS antenna connector during the active time slots shall be set to the value(s) given in table 8.4.
- (4) Measure the BLER of the wanted signal at the BS receiver.

Table 8.4: Parameters of DPCH<sub>0</sub> and the wanted signal

Test Number	BLER objective	Number of DPCH <sub>0</sub>	Power of each DPCH <sub>0</sub> measured at the BS antenna connector [dBm]	Parameters of the wanted signal		
				DPCH	SF	Power measured at the BS antenna connector [dBm]
1	$10^{-2}$	6	<del>-100,0-99,9</del>	DPCH <sub>1</sub>	8	<del>-97,0-96,9</del>
2	$10^{-1}$	4	<del>-98,9 -98,8</del>	DPCH <sub>1</sub>	16	<del>-98,9-98,8</del>
				DPCH <sub>2</sub>	4	<del>-92,9-92,8</del>
	$10^{-2}$	4	<del>-98,6-98,5</del>	DPCH <sub>1</sub>	16	<del>-98,6-98,5</del>
				DPCH <sub>2</sub>	4	<del>-92,6-92,5</del>
3	$10^{-1}$	0	–	DPCH <sub>1</sub>	16	<del>-98,7-98,5</del>
				DPCH <sub>2</sub>	2	<del>-89,7-89,5</del>
	$10^{-2}$	0	–	DPCH <sub>1</sub>	16	<del>-98,4-98,3</del>
				DPCH <sub>2</sub>	2	<del>-89,4-89,3</del>
4	$10^{-1}$	0	–	DPCH <sub>1</sub>	2	<del>-89,8-89,5</del>
						<del>-89,6-89,3</del>
	$10^{-2}$	0	–	DPCH <sub>1</sub>	2	<del>-89,6-89,3</del>

&lt;Next Changed Section&gt;

## 8.3 Demodulation of DCH in multipath fading conditions

## 8.3.1 Multipath fading Case 1

## 8.3.1.1 Definition and applicability

The performance requirement of DCH in multipath fading Case 1 is determined by the maximum Block Error Ratio (BLER) allowed when the receiver input signal is at a specified  $\hat{I}_{or}/I_{oc}$  limit. The BLER is calculated for each of the measurement channels supported by the base station.

The requirements in this subclause shall apply to base stations intended for general-purpose applications.



### 8.3.1.2 Minimum Requirements

#### 8.3.1.2.1 3,84 Mcps TDD option

For the parameters specified in table 8.5, the BLER should not exceed the piece-wise linear BLER curve specified in table 8.6. These requirements are applicable for TFCS size 16.

**Table 8.5: Parameters in multipath Case 1 channel**

Parameters	Unit	Test 1	Test 2	Test 3	Test 4
Number of DPCH <sub>0</sub>		6	4	0	0
$\frac{DPCH_o - E_c}{I_{or}}$	dB	-9	-9,5	-	-
$I_{oc}$	dBm/3,84 MHz	-89			
Cell Parameter*		0,1			
DPCH Channelization Codes*	C(k,Q)	C(1,8)	C(1,4) C(5,16)	C(1,2) C(9,16)	C(1,2)
DPCH <sub>0</sub> Channelization Codes*	C(k,Q)	C(i,16) 3 ≤ i ≤ 8	C(i,16) 6 ≤ i ≤ 9	-	-
Information Data Rate	Kbps	12,2	64	144	384

**\*Note: Refer to TS 25.223 for definition of channelization codes and cell parameter.**

**Table 8.6: Performance requirements in multipath Case 1 channel.**

Test Number	$\frac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	6,56,3	10 <sup>-2</sup>
	5,5	10 <sup>-1</sup>
2	9,89,4	10 <sup>-2</sup>
	5,56,6	10 <sup>-1</sup>
3	9,89,4	10 <sup>-2</sup>
	5,15,5	10 <sup>-1</sup>
4	9,58,7	10 <sup>-2</sup>

The normative reference for this requirement is TS 25.105 [1] subclause 8.3.1.1.1.

<Next Changed Section>

#### 8.3.1.4.2 Procedure

##### 8.3.1.4.2.1 3,84 Mcps TDD option

- (1) Adjust the power of the band-limited white noise source in such a way that its power spectral density measured at the BS antenna connector takes on the value  $I_{oc}$  as specified in table 8.5.
- (2) For a given test defined by the information data rate and the BLER objective, set the power of each DPCH<sub>0</sub> measured at the BS antenna connector during the active time slots to the value specified in table 8.7.
- (3) Set up a call between the BS tester generating the wanted signal and the BS. The characteristics of the call shall be configured according to the information data rate to be provided and the corresponding UL reference measurement channel defined in Annex A. Depending on the information data rate, the UL reference measurement channel makes use of one or two Dedicated Physical Channels (DPCH<sub>1</sub> and DPCH<sub>2</sub>) with different

spreading factors SF. The power(s) of DPCH<sub>1</sub> and DPCH<sub>2</sub> (if applicable) measured at the BS antenna connector during the active time slots shall be set to the value(s) given in table 8.7.

(4) Measure the BLER of the wanted signal at the BS receiver.

**Table 8.7: Parameters of DPCH<sub>0</sub> and the wanted signal**

Test Number	BLER objective	Number of DPCH <sub>0</sub>	Power of each DPCH <sub>0</sub> measured at the BS antenna connector [dBm]	Parameters of the wanted signal		
				DPCH	SF	Power measured at the BS antenna connector [dBm]
1	10 <sup>-2</sup>	6	<del>-91,5-91,7</del>	DPCH <sub>1</sub>	8	<del>-88,5-88,7</del>
2	10 <sup>-1</sup>	4	<del>-93,0</del> <del>-93</del>	DPCH <sub>1</sub>	16	<del>-93,0-93</del>
				DPCH <sub>2</sub>	4	<del>-87,0-87</del>
3	10 <sup>-2</sup>	4	<del>-88,7-89,4</del>	DPCH <sub>1</sub>	16	<del>-88,7-89,4</del>
				DPCH <sub>2</sub>	4	<del>-82,7-83,4</del>
	10 <sup>-1</sup>	0	-	DPCH <sub>1</sub>	16	<del>-93,0-92,9</del>
				DPCH <sub>2</sub>	2	<del>-84,0-83,9</del>
4	10 <sup>-1</sup>	0	-	DPCH <sub>1</sub>	16	<del>-88,7-89,4</del>
				DPCH <sub>2</sub>	2	<del>-79,7-80,4</del>
4	10 <sup>-2</sup>	0	-	DPCH <sub>1</sub>	2	<del>-83,9-83,5</del>
				DPCH <sub>1</sub>	2	<del>-79,5-80,3</del>

<Next Changed Section>

### 8.3.2 Multipath fading Case 2

#### 8.3.2.1 Definition and applicability

The performance requirement of DCH in multipath fading Case 2 is determined by the maximum Block Error Ratio (BLER) allowed when the receiver input signal is at a specified  $\hat{I}_{or}/I_{oc}$  limit. The BLER is calculated for each of the measurement channels supported by the base station.

The requirements in this subclause shall apply to base stations intended for general-purpose applications.

#### 8.3.2.2 Minimum Requirements

##### 8.3.2.2.1 3,84 Mcps TDD option

For the parameters specified in table 8.8, the BLER should not exceed the piece-wise linear BLER curve specified in table 8.8. These requirements are applicable for TFCS size 16.

**Table 8.8: Parameters in multipath Case 2 channel**

Parameters	Unit	Test 1	Test 2	Test 3	Test 4
Number of DPCH <sub>0</sub>		2	0	0	0
$\frac{DPCH_o - E_c}{I_{or}}$	DB	-6	-	-	-
$I_{oc}$	dBm/3,84 MHz	-89			
Cell Parameter*		0,1			
DPCH Channelization Codes*	C(k,Q)	C(1,8)	C(1,4) C(5,16)	C(1,2) C(9,16)	C(1,2)
DPCH <sub>0</sub> Channelization Codes*	C(k,Q)	C(i,16) 3 ≤ i ≤ 4	-	-	-
Information Data Rate	Kbps	12,2	64	144	384

**\*Note: Refer to TS 25.223 for definition of channelization codes and cell parameter.**

**Table 8.9: Performance requirements in multipath Case 2 channel.**

Test Number	$\frac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	<u>-0,40,4</u>	$10^{-2}$
2	<u>0,20,4</u>	$10^{-1}$
	<u>2,52,8</u>	$10^{-2}$
3	3,6	$10^{-1}$
	6,0	$10^{-2}$
4	<u>2,83,0</u>	$10^{-1}$
	<u>5,25,4</u>	$10^{-2}$

The normative reference for this requirement is TS 25.105 [1] subclause 8.3.2.1.1.

<Next Changed Section>

8.3.2.4.2 Procedure

8.3.2.4.2.1 3,84 Mcps TDD option

- (1) Adjust the power of the band-limited white noise source in such a way that its power spectral density measured at the BS antenna connector takes on the value  $I_{oc}$  as specified in table 8.8.
- (2) For a given test defined by the information data rate and the BLER objective, set the power of each DPCH<sub>0</sub> measured at the BS antenna connector during the active time slots to the value specified in table 8.101.
- (3) Set up a call between the BS tester generating the wanted signal and the BS. The characteristics of the call shall be configured according to the information data rate to be provided and the corresponding UL reference measurement channel defined in Annex A. Depending on the information data rate, the UL reference measurement channel makes use of one or two Dedicated Physical Channels (DPCH<sub>1</sub> and DPCH<sub>2</sub>) with different spreading factors SF. The power(s) of DPCH<sub>1</sub> and DPCH<sub>2</sub> (if applicable) measured at the BS antenna connector during the active time slots shall be set to the value(s) given in table 8.10.
- (4) Measure the BLER of the wanted signal at the BS receiver.

**Table 8.10: Parameters of DPCH<sub>0</sub> and the wanted signal**

Test Number	BLER objective	Number of DPCH <sub>0</sub>	Power of each DPCH <sub>0</sub> measured at the BS antenna connector [dBm]	Parameters of the wanted signal		
				DPCH	SF	Power measured at the BS antenna connector [dBm]
1	$10^{-2}$	2	<u>-95,4-94,9</u>	DPCH <sub>1</sub>	8	<u>-92,4-91,9</u>
2	$10^{-1}$	0	-	DPCH <sub>1</sub>	16	<u>-95,8-95,6</u>
				DPCH <sub>2</sub>	4	<u>-89,8-89,6</u>
	$10^{-2}$	0	-	DPCH <sub>1</sub>	16	<u>-93,5-93,2</u>
				DPCH <sub>2</sub>	4	<u>-87,5-87,2</u>
3	$10^{-1}$	0	-	DPCH <sub>1</sub>	16	-94,9
				DPCH <sub>2</sub>	2	-85,9
	$10^{-2}$	0	-	DPCH <sub>1</sub>	16	<u>-92,5-92,5</u>
				DPCH <sub>2</sub>	2	<u>-83,5-83,5</u>
4	$10^{-1}$	0	-	DPCH <sub>1</sub>	2	<u>-86,2-86</u>
	$10^{-2}$	0	-	DPCH <sub>1</sub>	2	<u>-83,8-83,6</u>

<Next Changed Section>

### 8.3.3 Multipath fading Case 3

#### 8.3.3.1 Definition and applicability

The performance requirement of DCH in multipath fading Case 3 is determined by the maximum Block Error Ratio (BLER) allowed when the receiver input signal is at a specified  $\hat{I}_{or}/I_{oc}$  limit. The BLER is calculated for each of the measurement channels supported by the base station.

The requirements in this subclause shall apply to base stations intended for general-purpose applications.

#### 8.3.3.2 Minimum Requirements

##### 8.3.3.2.1 3,84 Mcps TDD option

For the parameters specified in table 8.11, the BLER should not exceed the piece-wise linear BLER curve specified in Table 8.12. These requirements are applicable for TFCS size 16.

**Table 8.11: Parameters in multipath Case 3 channel**

Parameters	Unit	Test 1	Test 2	Test 3	Test 4
Number of DPCH <sub>o</sub>		2	0	0	0
$\frac{DPCH_o - E_c}{I_{or}}$	dB	-6	-	-	-
$I_{oc}$	dBm/3,84 MHz	-89			
Cell Parameter*		0,1			
DPCH Channelization Codes*	C(k,Q)	C(1,8)	C(1,4) C(5,16)	C(1,2) C(9,16)	C(1,2)
DPCH <sub>o</sub> Channelization Codes*	C(k,Q)	C(i,16) 3 ≤ i ≤ 4	-	-	-
Information Data Rate	Kbps	12,2	64	144	384

**\*Note: Refer to TS 25.223 for definition of channelization codes and cell parameter.**

**Table 8.12: Performance requirements in multipath Case 3 channel.**

Test Number	$\frac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	-0,1-0,6	10 <sup>-2</sup>
	0,80,7	10 <sup>-1</sup>
2	2,72,4	10 <sup>-2</sup>
	4,23,8	10 <sup>-3</sup>
	4,53,9	10 <sup>-1</sup>
3	6,35,9	10 <sup>-2</sup>
	8,07,3	10 <sup>-3</sup>
	3,62,8	10 <sup>-1</sup>
4	5,04,2	10 <sup>-2</sup>
	6,34,8	10 <sup>-3</sup>

The normative reference for this requirement is TS 25.105 [1] subclause 8.3.3.1.1.

<Next Changed Section>

#### 8.3.3.4.2 Procedure

##### 8.3.3.4.2.1 3,84 Mcps TDD option

- (1) Adjust the power of the band-limited white noise source in such a way that its power spectral density measured at the BS antenna connector takes on the value  $I_{oc}$  as specified in table 8.11.

- (2) For a given test defined by the information data rate and the BLER objective, set the power of each DPCH<sub>0</sub> measured at the BS antenna connector during the active time slots to the value specified in table 8.13.
- (3) Set up a call between the BS tester generating the wanted signal and the BS. The characteristics of the call shall be configured according to the information data rate to be provided and the corresponding UL reference measurement channel defined in Annex A. Depending on the information data rate, the UL reference measurement channel makes use of one or two Dedicated Physical Channels (DPCH<sub>1</sub> and DPCH<sub>2</sub>) with different spreading factors SF. The power(s) of DPCH<sub>1</sub> and DPCH<sub>2</sub> (if applicable) measured at the BS antenna connector during the active time slots shall be set to the value(s) given in table 8.131.
- (4) Measure the BLER of the wanted signal at the BS receiver.

**Table 8.13: Parameters of DPCH<sub>0</sub> and the wanted signal**

Test Number	BLER objective	Number of DPCH <sub>0</sub>	Power of each DPCH <sub>0</sub> measured at the BS antenna connector [dBm]	Parameters of the wanted signal		
				DPCH	SF	Power measured at the BS antenna connector [dBm]
1	10 <sup>-2</sup>	2	-95,1-95,6	DPCH <sub>1</sub>	8	-92,1-92,6
2	10 <sup>-1</sup>	0	-	DPCH <sub>1</sub>	16	-95,2-95,3
				DPCH <sub>2</sub>	4	-89,2-89,3
	10 <sup>-2</sup>	0	-	DPCH <sub>1</sub>	16	-93,3-93,6
				DPCH <sub>2</sub>	4	-87,3-87,6
10 <sup>-3</sup>	0	-	DPCH <sub>1</sub>	16	-91,8-92,2	
			DPCH <sub>2</sub>	4	-85,8-86,2	
3	10 <sup>-1</sup>	0	-	DPCH <sub>1</sub>	16	-94,0-94,6
				DPCH <sub>2</sub>	2	-85,0-85,6
	10 <sup>-2</sup>	0	-	DPCH <sub>1</sub>	16	-92,2-92,6
DPCH <sub>2</sub>				2	-83,2-83,6	
	10 <sup>-3</sup>	0	-	DPCH <sub>1</sub>	16	-90,5-91,2
				DPCH <sub>2</sub>	2	-81,5-82,2
4	10 <sup>-1</sup>	0	-	DPCH <sub>1</sub>	2	-85,4-86,2
	10 <sup>-2</sup>	0	-	DPCH <sub>1</sub>	2	-84,0-84,8
	10 <sup>-3</sup>	0	-	DPCH <sub>1</sub>	2	-82,7-84,2