TSG RAN Meeting #17 **RP-020482**
Biarritz, France, 3 - 6 September, 2002

Title **CRs (Rel-4 and Rel-5 Category A) to TS 25.142**
Source **TSG RAN WG4**
Agenda Item **7.4.4**

RAN4 Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item
R4-021209	25.142	134		F	Rel-4	4.5.0	Correction of Minimum Output power test for 1,28 Mcps TDD option.	LCRTDD-RF
R4-021210	25.142	135		A	Rel-5	5.1.0	Correction of Minimum Output power test for 1,28 Mcps TDD option.	LCRTDD-RF
R4-021211	25.142	136		F	Rel-4	4.5.0	Correction to blocking testing procedure for 1,28 Mcps TDD option.	LCRTDD-RF
R4-021212	25.142	137		A	Rel-5	5.1.0	Correction to blocking testing procedure for 1,28 Mcps TDD option.	LCRTDD-RF

3GPP TSR RAN WG4 Meeting #24 **R4-021209**

Helsinki, Finland 12 - 16 August 2002

CR-Form-v7

CHANGE REQUEST

⌘ **25.142** **CR** **134** ⌘ **rev** ⌘ Current version: **4.5.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Correction of Minimum Output power test for 1,28 Mcps TDD option.
Source:	⌘	RAN WG4
Work item code:	⌘	LCRTDD-RF
Date:	⌘	21/08/2002
Category:	⌘	**F**
Release:	⌘	Rel-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	The requirement for 1.28 Mcps TDD option BS for minimum output power is Pmax–30 dB. Additionally, the minimum requirement for power control dynamic range is 30 dB as specified in TS25.105. The current minimum output power test for 1.28 Mcps TDD option is performed with 8 codes. Thus, with this configuration, the Node B is implicitly required to support a power control dynamic range of 39 dB for one code(1 code at max power and 8 codes at min power) which has to be compared with the minimum requirement of 30 dB. Such a correction was already agreed for the 3,84 Mcps TDD option at RAN#13 in document RP-010623 CR76.
Summary of change:	⌘	1- Minimum output power test is performed with only 1 code.
Consequences if not approved:	⌘	The Node B under test has to implicitly support a power control dynamic range that is greater than the minimum requirement specified in TS25.105 in order to pass the current test. A correctly implemented node B satisfying the core requirements as specified in TS25.105 may fail the minimum output power test. This CR ensures that no Node B satisfying the core requirements will fail a test that is containing an implicit additional requirement that is more stringent than the core requirement. **Isolated impact analysis:** The proposed correction has no impact on Node B implementation or Node B-UE interworking.

Clauses affected:	⌘	6.4.4			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	Equivalent CRs in other Releases: CR135 cat. A to 25.142 v5.1.0			

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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.

6.4.4 Minimum output power

6.4.4.1 Definition and applicability

The minimum controlled output power of the BS is when the power is set to a minimum value.

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

6.4.4.2 Minimum Requirements

The DL minimum output power shall be less than or equal to:

Maximum output power - 30 dB.

The normative reference for this requirement is TS 25.105 [1] subclause 6.4.4.1.

6.4.4.3 Test purpose

The test purpose is to verify the ability of the BS to reduce its output power to a specified value.

6.4.4.4 Method of test

6.4.4.4.1 Initial conditions

6.4.4.4.1.0 General test conditions

Test environment: normal; see subclause 5.9.1.

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

6.4.4.4.1.1 3,84 Mcps TDD option

(1) Connect the BS tester to the antenna connector of the BS under test.

(2) Set the parameters of the BS transmitted signal according to table 6.7.

(3) Operate the BS in such a mode that it is able to interpret received TPC commands

(4) Start BS transmission.

NOTE: The BS tester used for this test must have the ability:

- to analyze the output signal of the BS under test with respect to thermal power;

- to simulate an UE with respect to the generation of TPC commands embedded in a valid UE signal.

Table 6.7: Parameters of the BS transmitted signal for minimum power test

Parameter	Value/description
TDD Duty Cycle	TS i; i = 0, 1, 2, ..., 14: transmit, if i is even; receive, if i is odd.
Number of DPCH in each active TS	1
Data content of DPCH	real life (sufficient irregular)

6.4.4.4.1.2 1,28 Mcps TDD option

(1) Connect the BS tester to the antenna connector of the BS under test.

(2) Set the parameters of the BS transmitted signal according to table 6.7A.

(3) Operate the BS in such a mode that it is able to interpret received TPC commands

(4) Start BS transmission.

NOTE: The BS tester used for this test must have the ability

- to analyze the output signal of the BS under test with respect to thermal power;

- to simulate an UE with respect to the generation of TPC commands embedded in a valid UE signal.

Table 6.7A: Parameters of the BS transmitted signal for minimum power test for 1,28 Mcps TDD

Parameter	Value/description
TDD Duty Cycle	TS i; i = 0, 1, 2, 3, 4, 5, 6: transmit, if i is 0,4,5,6; receive, if i is 1,2,3.
BS output power setting	PRAT
Number of DPCH in each active TS	1~~8~~
Power of each DPCH	PRAT~~1/8 of Base Station output power~~
Data content of DPCH	real life (sufficient irregular)

6.4.4.4.2 Procedure

6.4.4.4.2.1 3,84 Mcps TDD option

(1) Configure the BS transmitter to enable power control steps of size 1 dB.

(2) Set the BS tester to produce a sequence of TPC commands related to all active DPCH, with content "Decrease Tx power". This sequence shall be sufficiently long so that the output power of all active DPCH is controlled to reach its minimum, and shall be transmitted to the BS within the odd time slots TS i (receive time slots of the BS).

(3) Measure the power of the BS output signal over the 2464 active chips of an even time slot TS i (this excludes the guard period), and with a measurement filter that has a RRC filter response with a roll off $\alpha = 0,22$ and a bandwidth equal to the chip rate. The power is determined by calculating the RMS value of the signal samples at the measurement filter output taken at the decision points.

(4) Configure the BS transmitter to enable power control steps of 2 dB and of 3 dB, respectively, and repeat steps (2) and (3).

6.4.4.4.2.2 1,28 Mcps TDD option

(1) Configure the BS transmitter to enable power control steps of size 1 dB.

(2) Set the BS tester to produce a sequence of TPC commands related to all active DPCH, with content "Decrease Tx power". This sequence shall be sufficiently long so that the output power of all active DPCH is controlled to reach its minimum, and shall be transmitted to the BS within the receive time slots TS i of the BS.

(3) Measure the power of the BS output signal over the 848 active chips of a receive time slot TS i (this excludes the guard period), and with a measurement filter that has a RRC filter response with a roll off $\alpha = 0,22$ and a bandwidth equal to the chip rate. The power is determined by calculating the RMS value of the signal samples at the measurement filter output taken at the decision points.

(4) Configure the BS transmitter to enable power control steps of 2 dB and of 3 dB, respectively, and repeat steps (2) and (3).

6.4.4.5 Test Requirements

NOTE: If the Test Requirement below 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.

For all measurements, the minimum output power derived in step (4) of subclause 6.4.4.4.2 shall be at least 29,3 dB below the maximum output power as declared by the manufacturer; see 6.2.

3GPP TSR RAN WG4 Meeting #24 **R4-021210**

Helsinki, Finland 12 - 16 August 2002

CR-Form-v7

CHANGE REQUEST

⌘ **25.142** **CR** **135** ⌘ **rev** ⌘ Current version: **5.1.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Correction of Minimum Output power test for 1,28 Mcps TDD option.
Source:	⌘	RAN WG4
Work item code:	⌘	LCRTDD-RF
Date:	⌘	21/08/2002
Category:	⌘	**A**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change: ⌘ The requirement for 1.28 Mcps TDD option BS for minimum output power is Pmax–30 dB. Additionally, the minimum requirement for power control dynamic range is 30 dB as specified in TS25.105.
The current minimum output power test for 1.28 Mcps TDD option is performed with 8 codes. Thus, with this configuration, the Node B is implicitly required to support a power control dynamic range of 39 dB for one code(1 code at max power and 8 codes at min power) which has to be compared with the minimum requirement of 30 dB.
Such a correction was already agreed for the 3,84 Mcps TDD option at RAN#13 in document RP-010623 CR76.

Summary of change: ⌘ 1- Minimum output power test is performed with only 1 code.

Consequences if not approved: ⌘ The Node B under test has to implicitly support a power control dynamic range that is greater than the minimum requirement specified in TS25.105 in order to pass the current test.
A correctly implemented node B satisfying the core requirements as specified in TS25.105 may fail the minimum output power test.

This CR ensures that no Node B satisfying the core requirements will fail a test that is containing an implicit additional requirement that is more stringent than the core requirement.

Isolated impact analysis:
The proposed correction has no impact on Node B implementation or Node B-UE interworking.

Clauses affected:	⌘	6.4.4			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	Equivalent CRs in other Releases: CR134 cat. F to 25.142 v4.5.0			

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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.

6.4.4 Minimum output power

6.4.4.1 Definition and applicability

The minimum controlled output power of the BS is when the power is set to a minimum value.

The requirements in this subclause shall apply to both Wide Area BS and Local Area BS.

6.4.4.2 Minimum Requirements

The DL minimum output power shall be less than or equal to:

Maximum output power - 30 dB.

The normative reference for this requirement is TS 25.105 [1] subclause 6.4.4.1.

6.4.4.3 Test purpose

The test purpose is to verify the ability of the BS to reduce its output power to a specified value.

6.4.4.4 Method of test

6.4.4.4.1 Initial conditions

6.4.4.4.1.0 General test conditions

Test environment: normal; see subclause 5.9.1.

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

6.4.4.4.1.1 3,84 Mcps TDD option

(1) Connect the BS tester to the antenna connector of the BS under test.

(2) Set the parameters of the BS transmitted signal according to table 6.7.

(3) Operate the BS in such a mode that it is able to interpret received TPC commands

(4) Start BS transmission.

NOTE: The BS tester used for this test must have the ability:

- to analyse the output signal of the BS under test with respect to thermal power;
- to simulate an UE with respect to the generation of TPC commands embedded in a valid UE signal.

Table 6.7: Parameters of the BS transmitted signal for minimum power test

Parameter	Value/description
TDD Duty Cycle	TS i; i = 0, 1, 2, ..., 14: transmit, if i is even; receive, if i is odd.
Number of DPCH in each active TS	1
Data content of DPCH	real life (sufficient irregular)

6.4.4.4.1.2 1,28 Mcps TDD option

(1) Connect the BS tester to the antenna connector of the BS under test.

(2) Set the parameters of the BS transmitted signal according to table 6.7A.

(3) Operate the BS in such a mode that it is able to interpret received TPC commands

(4) Start BS transmission.

NOTE: The BS tester used for this test must have the ability

- to analyse the output signal of the BS under test with respect to thermal power;
- to simulate an UE with respect to the generation of TPC commands embedded in a valid UE signal.

Table 6.7A: Parameters of the BS transmitted signal for minimum power test for 1,28 Mcps TDD

Parameter	Value/description
TDD Duty Cycle	TS i; i = 0, 1, 2, 3, 4, 5, 6: transmit, if i is 0,4,5,6; receive, if i is 1,2,3.
BS output power setting	PRAT
Number of DPCH in each active TS	1~~8~~
Power of each DPCH	PRAT ~~1/8 of Base Station output power~~
Data content of DPCH	real life (sufficient irregular)

6.4.4.4.2 Procedure

6.4.4.4.2.1 3,84 Mcps TDD option

(1) Configure the BS transmitter to enable power control steps of size 1 dB.

(2) Set the BS tester to produce a sequence of TPC commands related to all active DPCH, with content "Decrease Tx power". This sequence shall be sufficiently long so that the output power of all active DPCH is controlled to reach its minimum, and shall be transmitted to the BS within the odd time slots TS i (receive time slots of the BS).

(3) Measure the power of the BS output signal over the 2464 active chips of an even time slot TS i (this excludes the guard period), and with a measurement filter that has a RRC filter response with a roll off $\alpha = 0,22$ and a bandwidth equal to the chip rate. The power is determined by calculating the RMS value of the signal samples at the measurement filter output taken at the decision points.

(4) Configure the BS transmitter to enable power control steps of 2 dB and of 3 dB, respectively, and repeat steps (2) and (3).

6.4.4.4.2.2 1,28 Mcps TDD option

(1) Configure the BS transmitter to enable power control steps of size 1 dB.

(2) Set the BS tester to produce a sequence of TPC commands related to all active DPCH, with content "Decrease Tx power". This sequence shall be sufficiently long so that the output power of all active DPCH is controlled to reach its minimum, and shall be transmitted to the BS within the receive time slots TS i of the BS.

(3) Measure the power of the BS output signal over the 848 active chips of a receive time slot TS i (this excludes the guard period), and with a measurement filter that has a RRC filter response with a roll off $\alpha = 0,22$ and a bandwidth equal to the chip rate. The power is determined by calculating the RMS value of the signal samples at the measurement filter output taken at the decision points.

(4) Configure the BS transmitter to enable power control steps of 2 dB and of 3 dB, respectively, and repeat steps (2) and (3).

6.4.4.5 Test Requirements

NOTE: If the Test Requirement below 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.

For all measurements, the minimum output power derived in step (4) of subclause 6.4.4.4.2 shall be at least 29,3 dB below the maximum output power as declared by the manufacturer; see 6.2.

3GPP TSR RAN WG4 Meeting #24 **R4-021211**

Helsinki, Finland 12 - 16 August 2002

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CHANGE REQUEST

⌘ **25.142** **CR** **136** ⌘ **rev** ⌘ Current version: **4.5.0** ⌘

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Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Correction to blocking testing procedure for 1,28 Mcps TDD option.
Source:	⌘	RAN WG4
Work item code:	⌘	LCRTDD-RF
Date:	⌘	21/08/2002
Category:	⌘	**F**
Release:	⌘	Rel-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	Blocking requirements are valid for an interfering signal for which the frequency offset with the assigned wanted signal is greater than 10 MHz for the 3,84 Mcps TDD option and 3,2 MHz for the 1,28 Mcps TDD option as described in TS 25.105 section 7.5. However the current procedure for 1,28 Mcps TDD option performs the measurement for a frequency offset greater than 10 MHz. Thus the band between 3,2 Mhz and 10 MHz is not tested.
Summary of change:	⌘	The procedure is corrected to that the tested frequency offset starts at 3,2 MHz with a step of 1 MHz.
Consequences if not approved:	⌘	The blocking requirement for frequency offset between 3,2 MHz and 10 MHz is not tested. The system is not ensure to work properly since an important requirement is not tested. The CR makes sure that an important requirement is fully tested and no Node B which is **not** compliant with the core requirement can pass the test and harm the overall system performances. **Isolated impact analysis:** The proposed correction has no impact on UE-Node B interworking or Node B implementation that are already inline with the core requirement.
Clauses affected:	⌘	7.5.4.2.2

Y | N

Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	Equivalent CRs in other Releases: CR137 cat. A to 25.142 v5.1.0			

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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.

7.5.2 Minimum Requirements

7.5.2.1 3,84 Mcps TDD option

7.5.2.1.1 General requirements

The static reference performance as specified in clause 7.2 shall be met with a wanted and an interfering signal coupled to the BS antenna input using the parameters specified in tables 7.6, 7.7 and or 7.8 respectively.

Table 7.6: Blocking requirements for operating bands defined in subclause 4.2 a)

Center frequency of interfering signal	Interfering signal mean power	Wanted signal mean power	Minimum offset of interfering signal	Type of interfering signal
1900 – 1920 MHz, 2010 – 2025 MHz	-40 dBm	-103 dBm	10 MHz	WCDMA signal with one code
1880 – 1900 MHz, 1990 – 2010 MHz, 2025 – 2045 MHz	-40 dBm	-103 dBm	10 MHz	WCDMA signal with one code
1920 – 1980 MHz	-40 dBm	-103 dBm	10 MHz	WCDMA signal with one code
1 - 1880 MHz, 1980 – 1990 MHz, 2045 – 12750 MHz	-15 dBm	-103 dBm	—	CW carrier

Table 7.7: Blocking requirements for operating bands defined in subclause 4.2 b)

Center frequency of interfering signal	Interfering signal mean power	Wanted signal mean power	Minimum offset of interfering signal	Type of interfering signal
1850 – 1990 MHz	-40 dBm	-103 dBm	10 MHz	WCDMA signal with one code
1830 – 1850 MHz, 1990 – 2010 MHz	-40 dBm	-103 dBm	10 MHz	WCDMA signal with one code
1 – 1830 MHz, 2010 – 12750 MHz	-15 dBm	-103 dBm	—	CW carrier

Table 7.8: Blocking requirements for operating bands defined in subclause 4.2 c)

Center frequency of interfering signal	Interfering signal mean power	Wanted signal mean power	Minimum offset of interfering signal	Type of interfering signal
1910 – 1930 MHz	-40 dBm	-103 dBm	10 MHz	WCDMA signal with one code
1890 – 1910 MHz, 1930 – 1950 MHz	-40 dBm	-103 dBm	10 MHz	WCDMA signal with one code
1 – 1890 MHz, 1950 – 12750 MHz	-15 dBm	-103 dBm	—	CW carrier

The normative reference for this requirement is TS 25.105 [1] subclause 7.5.0.1.

7.5.2.1.2 Co-location with GSM900 and/or DCS 1800

This additional blocking requirement may be applied for the protection of TDD BS receivers when GSM900 and/or DCS1800 BTS are co-located with UTRA TDD BS.

The blocking performance requirement applies to interfering signals with center frequency within the ranges specified in the tables below, using a 1MHz step size.

In case this additional blocking requirement is applied, the static reference performance as specified in clause 7.2.1 shall be met with a wanted and an interfering signal coupled to BS antenna input using the following parameters.

Table 7.9: Additional blocking requirements for operating bands defined in subclause 4.2 a) when co-located with GSM900

Center Frequency of Interfering Signal	Interfering Signal mean power	Wanted Signal mean power	Minimum Offset of Interfering Signal	Type of Interfering Signal
921 – 960 MHz	+16 dBm	-103 dBm	—	CW carrier

Table 7.10: Additional blocking requirements for operating bands defined in subclause 4.2 a) when co-located with DCS1800

Center Frequency of Interfering Signal	Interfering Signal mean power	Wanted Signal mean power	Minimum Offset of Interfering Signal	Type of Interfering Signal
1805 - 1880	+16 dBm	-103 dBm	—	CW carrier

The normative reference for this requirement is TS 25.105 [1] subclause 7.5.1.1.

7.5.2.2 1,28 Mcps TDD option

7.5.2.2.1 General requirements

The static reference performance as specified in clause 7.2 shall be met with a wanted and an interfering signal coupled to the BS antenna input using the parameters specified in tables 7.6A,7.7A or 7.8A, respectively.

Table 7.6A: Blocking requirements for operating bands defined in subclause 4.2 a) for 1,28 Mcps TDD

Center frequency of interfering signal	Interfering signal mean power	Wanted signal mean power	Minimum offset of interfering signal	Type of interfering signal
1900 – 1920 MHz, 2010 – 2025 MHz	-40 dBm	–104 dBm	3.2 MHz	1,28 Mcps TDD signal with one code
1880 – 1900 MHz, 1990 – 2010 MHz, 2025 – 2045 MHz	-40 dBm	–104 dBm	3.2 MHz	1,28 Mcps TDD signal with one code
1920 – 1980 MHz	-40 dBm	–104 dBm	3.2 MHz	1,28 Mcps TDD signal with one code
1 - 1880 MHz, 1980 – 1990 MHz, 2045 – 12750 MHz	-15 dBm	–104 dBm	—	CW carrier

Table 7.7A: Blocking requirements for operating bands defined in subclause 4.2 b)for 1,28 Mcps TDD

Center frequency of interfering signal	Interfering signal mean power	Wanted signal mean power	Minimum offset of interfering signal	Type of interfering signal
1850 – 1990 MHz	-40 dBm	–104 dBm	3.2 MHz	1,28 Mcps TDD signal with one code
1830 – 1850 MHz, 1990 – 2010 MHz	-40 dBm	–104 dBm	3.2 MHz	1,28 Mcps TDD signal with one code
1 – 1830 MHz, 2010 – 12750 MHz	-15 dBm	–104 dBm	—	CW carrier

Table 7.8A: Blocking requirements for operating bands defined in subclause 4.2 c)for 1,28 Mcps TDD

Center frequency of interfering signal	Interfering signal mean power	Wanted signal mean power	Minimum offset of interfering signal	Type of interfering signal
1910 – 1930 MHz	-40 dBm	–104 dBm	3.2 MHz	1,28 Mcps TDD signal with one code
1890 – 1910 MHz, 1930 – 1950 MHz	-40 dBm	–104 dBm	3.2 MHz	1,28 Mcps TDD signal with one code
1 – 1890 MHz, 1950 – 12750 MHz	-15 dBm	–104 dBm	—	CW carrier

The normative reference for this requirement is TS 25.105 [1] subclause 7.5.0.2.

7.5.2.2.2 Co-location with GSM900 and/or DCS 1800

This additional blocking requirement may be applied for the protection of TDD BS receivers when GSM900 and/or DCS1800 BTS are co-located with UTRA TDD BS.

The blocking performance requirement applies to interfering signals with center frequency within the ranges specified in the tables below, using a 1MHz step size.

In case this additional blocking requirement is applied, the static reference performance as specified in clause 7.2.1 shall be met with a wanted and an interfering signal coupled to BS antenna input using the following parameters.

Table 7.9A: Additional blocking requirements for operating bands defined in 4.2(a) when co-located with GSM900

Centre Frequency of Interfering Signal	Interfering Signal mean power	Wanted Signal mean power	Minimum Offset of Interfering Signal	Type of Interfering Signal
921 – 960 MHz	+16 dBm	–104 dBm	—	CW carrier

Table 7.10A: Additional blocking requirements for operating bands defined in 4.2(a) when co-located with DCS1800

Center Frequency of Interfering Signal	Interfering Signal mean power	Wanted Signal mean power	Minimum Offset of Interfering Signal	Type of Interfering Signal
1805 – 1880 MHz	+16 dBm	–104 dBm	—	CW carrier

The normative reference for this requirement is TS 25.105 [1] subclause 7.5.1.2.

7.5.3 Test purpose

7.5.3.1 3,84 Mcps TDD option

The test stresses the ability of the BS receiver to withstand high-level interference from unwanted signals at frequency offsets of 10 MHz or more, without undue degradation of its sensitivity.

7.5.3.2 1,28 Mcps TDD option

The test stresses the ability of the BS receiver to withstand high-level interference from unwanted signals at frequency offsets of 3,2 MHz or more, without undue degradation of its sensitivity.

7.5.4 Method of test

7.5.4.1 Initial conditions

Test environment: normal; see subclause 5.9.1.

RF channels to be tested: M; see subclause 5.3. The BS shall be configured to operate as close to the centre of the operating band as possible.

(1) Connect an UE simulator operating at the assigned channel frequency of the wanted signal and a signal generator to the antenna connector of one Rx port.

(2) Terminate or disable any other Rx port not under test.

(3) Start transmission from the BS tester to the BS using the UL reference measurement channel (12,2 kbps) defined in Annex A.2.1.The level of the UE simulator signal measured at the BS antenna connector shall be set to 6 dB above the reference sensitivity level specified in subclause 7.2.2.

7.5.4.2 Procedure

7.5.4.2.1 3,84 Mcps TDD option

(1) Set the signal generator to produce an interfering signal at a frequency offset Fuw from the assigned channel frequency of the wanted signal which is given by

$$Fuw = \pm (n \times 1\ MHz),$$

where n shall be increased in integer steps from n = 10 up to such a value that the center frequency of the interfering signal covers the range from 1 MHz to 12,75 GHz. The interfering signal level measured at the antenna connector shall be set in dependency of its center frequency, as specified in tables 7.6, 7.7, or 7.8 respectively. The type of the interfering signal is either equivalent to a continuous wideband CDMA signal with one code of chip frequency 3,84 Mchip/s, filtered by an RRC transmit pulse-shaping filter with roll-off $\alpha = 0,22$, or a CW signal; see tables 7.6, 7.7 or 7.8 respectively.

(2) Measure the BER of the wanted signal at the BS receiver.

(3) Interchange the connections of the BS Rx ports and repeat the measurements according to steps (1) and (2).

NOTE: The test procedure as defined in steps (1) and (2) requests to carry out more than 10000 BER measurements. To reduce the time needed for these measurements, it may be appropriate to conduct the test in two phases: During phase 1, BER measurements are made on all center frequencies of the interfering signal as requested but with a reduced confidence level, with the aim to identify those frequencies which require more detailed investigation. In phase 2, detailed measurements are made only at those critical frequencies identified before, applying the required confidence level.

7.5.4.2.2 1,28 Mcps TDD option

(1) Set the signal generator to produce an interfering signal at a frequency offset Fuw from the assigned channel frequency of the wanted signal which is given by

~~Fuw = ± (n x 1 MHz),~~

$$\underline{Fuw = \pm (3,2 + n) \times 1\ MHz}$$

where n shall be increased in integer steps from n = ~~1~~0 up to such a value that the center frequency of the interfering signal covers the range from 1 MHz to 12,75 GHz. The interfering signal level measured at the antenna connector shall be set in dependency of its center frequency, as specified in tables 7.6A, 7.7A, or 7.8A respectively. The type of the interfering signal is either equivalent to a continuous wideband CDMA signal with one code of chip frequency 1,28 Mchip/s, filtered by an RRC transmit pulse-shaping filter with roll-off $\alpha = 0,22$, or a CW signal; see tables 7.6A, 7.7A, or 7.8A respectively.

(2) Measure the BER of the wanted signal at the BS receiver.

(3) nterchange the connections of the BS Rx ports and repeat the measurements according to steps (1) and (2).

NOTE: The test procedure as defined in steps (1) and (2) requests to carry out more than 10000 BER measurements. To reduce the time needed for these measurements, it may be appropriate to conduct the test in two phases: During phase 1, BER measurements are made on all center frequencies of the interfering signal as requested but with a reduced confidence level, with the aim to identify those frequencies which require more detailed investigation. In phase 2, detailed measurements are made only at those critical frequencies identified before, applying the required confidence level.

7.5.5 Test Requirements

NOTE: If the Test Requirement below 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.

In all measurements made according to subclause 7.5.4.2, the BER shall not exceed 0,001.

3GPP TSR RAN WG4 Meeting #24 **R4-021212**

Helsinki, Finland 12 - 16 August 2002

CR-Form-v7

CHANGE REQUEST

⌘ **25.142** **CR** **137** ⌘ **rev** ⌘ Current version: **5.1.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Correction to blocking testing procedure for 1,28 Mcps TDD option.
Source:	⌘	RAN WG4
Work item code:	⌘	LCRTDD-RF
Date:	⌘	21/08/2002
Category:	⌘	**A**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	Blocking requirements are valid for an interfering signal for which the frequency offset with the assigned wanted signal is greater than 10 MHz for the 3,84 Mcps TDD option and 3,2 MHz for the 1,28 Mcps TDD option as described in TS 25.105 section 7.5. However the current procedure for 1,28 Mcps TDD option performs the measurement for a frequency offset greater than 10 MHz. Thus the band between 3,2 Mhz and 10 MHz is not tested.
Summary of change:	⌘	The procedure is corrected to that the tested frequency offset starts at 3,2 MHz with a step of 1 MHz.
Consequences if not approved:	⌘	The blocking requirement for frequency offset between 3,2 MHz and 10 MHz is not tested. The system is not ensure to work properly since an important requirement is not tested. The CR makes sure that an important requirement is fully tested and no Node B which is **not** compliant with the core requirement can pass the test and harm the overall system performances. **Isolated impact analysis:** The proposed correction has no impact on UE-Node B interworking or Node B implementation that are already inline with the core requirement.

Clauses affected:	⌘	7.5.4.2.2

Y | N

Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	Equivalent CRs in other Releases: CR136 cat. F to 25.142 v4.5.0			

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.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.

7.5 Blocking characteristics

7.5.1 Definition and applicability

7.5.1.1 3,84 Mcps TDD option

The blocking characteristics is a measure of the receiver ability to receive a wanted signal at its assigned channel frequency in the presence of an unwanted interferer on frequencies other than those of the adjacent channels. The blocking performance requirements apply to interfering signals with center frequency within the ranges specified in tables7.6-1, 7.7-1, 7.8-1, 7.6-2, 7.7-2, 7.8-2, 7.9 and 7.10 respectively, using a 1 MHz step size.

In this subclause, different requirements shall apply to Wide Area BS and Local Area BS.The requirements in tables 7.6-1, 7.7-1 or 7.8-1 apply to Wide Area BS, and the requirements in tables 7.6-2, 7.7-2 or 7.8-2 apply to Local Area BS, depending on which frequency band is used. The additional requirements in Tables 7.9 and 7.10 may be applied for the protection of TDD BS receivers when GSM900 and/or DCS1800 BTS are co-located with UTRA TDD Wide Area BS.

7.5.1.2 1,28 Mcps TDD option

The blocking characteristics is a measure of the receiver ability to receive a wanted signal at its assigned channel frequency in the presence of an unwanted interferer on frequencies other than those of the adjacent channels. The blocking performance requirements apply to interfering signals with center frequency within the ranges specified in tables 7.6A-1, 7.7A-1, 7.8A-1, 7.6A-2, 7.7A-2, 7.8A-2, 7.9A and 7.10A respectively, using a 1 MHz step size.

In this subclause, different requirements apply to Wide Area BS and Local Area BS. The requirements in tables 7.6A-1, 7.7A-1 or 7.8A-1 apply to Wide Area BS, and the requirements in tables 7.6A-2, 7.7A-2 or 7.8A-2 apply to Local Area BS, depending on which frequency band is used. The additional requirements in Tables 7.9A and 7.10A may be applied for the protection of TDD BS receivers when GSM900 and/or DCS1800 BTS are co-located with UTRA TDD Wide Area BS.

7.5.2 Minimum Requirements

7.5.2.1 3,84 Mcps TDD option

7.5.2.1.1 General requirements

The static reference performance as specified in clause 7.2 shall be met with a wanted and an interfering signal coupled to the BS antenna input using the parameters specified in tables 7.6-1, 7.7-1, 7.8-1, 7.6-2, 7.7-2 or 7.8-2, respectively.

Table 7.6-1: Blocking requirements for Wide Area BS in operating bands defined in subclause 4.2 a)

Center frequency of interfering signal	Interfering signal mean power	Wanted signal mean power	Minimum offset of interfering signal	Type of interfering signal
1900 – 1920 MHz, 2010 – 2025 MHz	-40 dBm	-103 dBm	10 MHz	WCDMA signal with one code
1880 – 1900 MHz, 1990 – 2010 MHz, 2025 – 2045 MHz	-40 dBm	-103 dBm	10 MHz	WCDMA signal with one code
1920 – 1980 MHz	-40 dBm	-103 dBm	10 MHz	WCDMA signal with one code
1 - 1880 MHz, 1980 – 1990 MHz, 2045 – 12750 MHz	-15 dBm	-103 dBm	—	CW carrier

Table 7.7-1: Blocking requirements for Wide Area BS in operating bands defined in subclause 4.2 b)

Center frequency of interfering signal	Interfering signal mean power	Wanted signal mean power	Minimum offset of interfering signal	Type of interfering signal
1850 – 1990 MHz	-40 dBm	-103 dBm	10 MHz	WCDMA signal with one code
1830 – 1850 MHz, 1990 – 2010 MHz	-40 dBm	-103 dBm	10 MHz	WCDMA signal with one code
1 – 1830 MHz, 2010 – 12750 MHz	-15 dBm	-103 dBm	—	CW carrier

Table 7.8-1: Blocking requirements for Wide Area BS in operating bands defined in subclause 4.2 c)

Center frequency of interfering signal	Interfering signal mean power	Wanted signal mean power	Minimum offset of interfering signal	Type of interfering signal
1910 – 1930 MHz	-40 dBm	-103 dBm	10 MHz	WCDMA signal with one code
1890 – 1910 MHz, 1930 – 1950 MHz	-40 dBm	-103 dBm	10 MHz	WCDMA signal with one code
1 – 1890 MHz, 1950 – 12750 MHz	-15 dBm	-103 dBm	—	CW carrier

Table 7.6-2: Blocking requirements for Local Area BS in operating bands defined in subclause 4.2 a)

Center frequency of interfering signal	Interfering signal level	Wanted signal level	Minimum offset of interfering signal	Type of interfering signal
1900 – 1920 MHz, 2010 – 2025 MHz	-30 dBm	<REFSENS> + 6 dB	10 MHz	WCDMA signal with one code
1880 – 1900 MHz, 1990 – 2010 MHz, 2025 – 2045 MHz	-30 dBm	<REFSENS> + 6 dB	10 MHz	WCDMA signal with one code
1920 – 1980 MHz	-30 dBm	<REFSENS> + 6 dB	10 MHz	WCDMA signal with one code
1 - 1880 MHz, 1980 – 1990 MHz, 2045 – 12750 MHz	-15 dBm	<REFSENS> + 6 dB	—	CW carrier

Table 7.7-2: Blocking requirements for Local Area BS in operating bands defined in subclause 4.2 b)

Center frequency of interfering signal	Interfering signal level	Wanted signal level	Minimum offset of interfering signal	Type of interfering signal
1850 – 1990 MHz	-30 dBm	<REFSENS> + 6 dB	10 MHz	WCDMA signal with one code
1830 – 1850 MHz, 1990 – 2010 MHz	-30 dBm	<REFSENS> + 6 dB	10 MHz	WCDMA signal with one code
1 – 1830 MHz, 2010 – 12750 MHz	-15 dBm	<REFSENS> + 6 dB	—	CW carrier

Table 7.8-2: Blocking requirements for Local Area BS in operating bands defined in subclause 4.2 c)

Center frequency of interfering signal	Interfering signal level	Wanted signal level	Minimum offset of interfering signal	Type of interfering signal
1910 – 1930 MHz	-30 dBm	<REFSENS> + 6 dB	10 MHz	WCDMA signal with one code
1890 – 1910 MHz, 1930 – 1950 MHz	-30 dBm	<REFSENS> + 6 dB	10 MHz	WCDMA signal with one code
1 – 1890 MHz, 1950 – 12750 MHz	-15 dBm	<REFSENS> + 6 dB	—	CW carrier

The normative reference for this requirement is TS 25.105 [1] subclause 7.5.0.1.

7.5.2.1.2 Co-location with GSM900 and/or DCS 1800

This additional blocking requirement may be applied for the protection of TDD BS receivers when GSM900 and/or DCS1800 BTS are co-located with UTRA TDD Wide Area BS.

The blocking performance requirement applies to interfering signals with center frequency within the ranges specified in the tables below, using a 1MHz step size.

In case this additional blocking requirement is applied, the static reference performance as specified in clause 7.2.1 shall be met with a wanted and an interfering signal coupled to BS antenna input using the following parameters.

Table 7.9: Additional blocking requirements for Wide Area BS in operating bands defined in subclause 4.2 a) when co-located with GSM900

Center Frequency of Interfering Signal	Interfering Signal mean power	Wanted Signal mean power	Minimum Offset of Interfering Signal	Type of Interfering Signal
921 – 960 MHz	+16 dBm	-103 dBm	—	CW carrier

Table 7.10: Additional blocking requirements for Wide Area BS in operating bands defined in subclause 4.2 a) when co-located with DCS1800

Center Frequency of Interfering Signal	Interfering Signal mean power	Wanted Signal mean power	Minimum Offset of Interfering Signal	Type of Interfering Signal
1805 - 1880	+16 dBm	-103 dBm	—	CW carrier

The normative reference for this requirement is TS 25.105 [1] subclause 7.5.1.1.

7.5.2.2 1,28 Mcps TDD option

7.5.2.2.1 General requirements

The static reference performance as specified in clause 7.2 shall be met with a wanted and an interfering signal coupled to the BS antenna input using the parameters specified in tables 7.6A-1, 7.7A-1,7.8A-1, 7.6A-2, 7.7A-2 or 7.8A-2, respectively.

Table 7.6A-1: Blocking requirements for Wide Area BS in operating bands defined in subclause 4.2 a) for 1,28 Mcps TDD

Center frequency of interfering signal	Interfering signal mean power	Wanted signal mean power	Minimum offset of interfering signal	Type of interfering signal
1900 – 1920 MHz, 2010 – 2025 MHz	-40 dBm	–104 dBm	3.2 MHz	1,28 Mcps TDD signal with one code
1880 – 1900 MHz, 1990 – 2010 MHz, 2025 – 2045 MHz	-40 dBm	–104 dBm	3.2 MHz	1,28 Mcps TDD signal with one code
1920 – 1980 MHz	-40 dBm	–104 dBm	3.2 MHz	1,28 Mcps TDD signal with one code
1 - 1880 MHz, 1980 – 1990 MHz, 2045 – 12750 MHz	-15 dBm	–104 dBm	—	CW carrier

Table 7.7A-1: Blocking requirements for Wide Area BS in operating bands defined in subclause 4.2 b) for 1,28 Mcps TDD

Center frequency of interfering signal	Interfering signal mean power	Wanted signal mean power	Minimum offset of interfering signal	Type of interfering signal
1850 – 1990 MHz	-40 dBm	–104 dBm	3.2 MHz	1,28 Mcps TDD signal with one code
1830 – 1850 MHz, 1990 – 2010 MHz	-40 dBm	–104 dBm	3.2 MHz	1,28 Mcps TDD signal with one code
1 – 1830 MHz, 2010 – 12750 MHz	-15 dBm	–104 dBm	—	CW carrier

Table 7.8A-1: Blocking requirements for Wide Area BS in operating bands defined in subclause 4.2 c) for 1,28 Mcps TDD

Center frequency of interfering signal	Interfering signal mean power	Wanted signal mean power	Minimum offset of interfering signal	Type of interfering signal
1910 – 1930 MHz	-40 dBm	–104 dBm	3.2 MHz	1,28 Mcps TDD signal with one code
1890 – 1910 MHz, 1930 – 1950 MHz	-40 dBm	–104 dBm	3.2 MHz	1,28 Mcps TDD signal with one code
1 – 1890 MHz, 1950 – 12750 MHz	-15 dBm	–104 dBm	—	CW carrier

Table 7.6A-2: Blocking requirements for Local Area BS in operating bands defined in subclause 4.2 a) for 1,28 Mcps TDD

Center frequency of interfering signal	Interfering signal level	Wanted signal level	Minimum offset of interfering signal	Type of interfering signal
1900 – 1920 MHz, 2010 – 2025 MHz	-30 dBm	<REFSENS> + 6 dB	3,2 MHz	1,28 Mcps TDD signal with one code
1880 – 1900 MHz, 1990 – 2010 MHz, 2025 – 2045 MHz	-30 dBm	<REFSENS> + 6 dB	3,2 MHz	1,28 Mcps TDD signal with one code
1920 – 1980 MHz	-30 dBm	<REFSENS> + 6 dB	3,2 MHz	1,28 Mcps TDD signal with one code
1 - 1880 MHz, 1980 – 1990 MHz, 2045 – 12750 MHz	-15 dBm	<REFSENS> + 6 dB	—	CW carrier

Table 7.7A-2: Blocking requirements for Local Area BS in operating bands defined in subclause 4.2 b) for 1,28 Mcps TDD

Center frequency of interfering signal	Interfering signal level	Wanted signal level	Minimum offset of interfering signal	Type of interfering signal
1850 – 1990 MHz	-30 dBm	<REFSENS> + 6 dB	3,2 MHz	1,28 Mcps TDD signal with one code
1830 – 1850 MHz, 1990 – 2010 MHz	-30 dBm	<REFSENS> + 6 dB	3,2 MHz	1,28 Mcps TDD signal with one code
1 – 1830 MHz, 2010 – 12750 MHz	-15 dBm	<REFSENS> + 6 dB	—	CW carrier

Table 7.8A-2: Blocking requirements for Local Area BS in operating bands defined in subclause 4.2 c) for 1,28 Mcps TDD

Center frequency of interfering signal	Interfering signal level	Wanted signal level	Minimum offset of interfering signal	Type of interfering signal
1910 – 1930 MHz	-30 dBm	<REFSENS> + 6 dB	3,2 MHz	1,28 Mcps TDD signal with one code
1890 – 1910 MHz, 1930 – 1950 MHz	-30 dBm	<REFSENS> + 6 dB	3,2 MHz	1,28 Mcps TDD signal with one code
1 – 1890 MHz, 1950 – 12750 MHz	-15 dBm	<REFSENS> + 6 dB	—	CW carrier

The normative reference for this requirement is TS 25.105 [1] subclause 7.5.0.2.

7.5.2.2.2 Co-location with GSM900 and/or DCS 1800

This additional blocking requirement may be applied for the protection of TDD BS receivers when GSM900 and/or DCS1800 BTS are co-located with UTRA TDD Wide Area BS.

The blocking performance requirement applies to interfering signals with center frequency within the ranges specified in the tables below, using a 1MHz step size.

In case this additional blocking requirement is applied, the static reference performance as specified in clause 7.2.1 shall be met with a wanted and an interfering signal coupled to BS antenna input using the following parameters.

Table 7.9A: Additional blocking requirements for Wide Area BS in operating bands defined in 4.2(a) when co-located with GSM900

Centre Frequency of Interfering Signal	Interfering Signal mean power	Wanted Signal mean power	Minimum Offset of Interfering Signal	Type of Interfering Signal
921 – 960 MHz	+16 dBm	–104 dBm	—	CW carrier

Table 7.10A: Additional blocking requirements for Wide Area BS in operating bands defined in 4.2(a) when co-located with DCS1800

Center Frequency of Interfering Signal	Interfering Signal mean power	Wanted Signal mean power	Minimum Offset of Interfering Signal	Type of Interfering Signal
1805 – 1880 MHz	+16 dBm	–104 dBm	—	CW carrier

The normative reference for this requirement is TS 25.105 [1] subclause 7.5.1.2.

7.5.3 Test purpose

7.5.3.1 3,84 Mcps TDD option

The test stresses the ability of the BS receiver to withstand high-level interference from unwanted signals at frequency offsets of 10 MHz or more, without undue degradation of its sensitivity.

7.5.3.2 1,28 Mcps TDD option

The test stresses the ability of the BS receiver to withstand high-level interference from unwanted signals at frequency offsets of 3,2 MHz or more, without undue degradation of its sensitivity.

7.5.4 Method of test

7.5.4.1 Initial conditions

Test environment: normal; see subclause 5.9.1.

RF channels to be tested: M; see subclause 5.3. The BS shall be configured to operate as close to the centre of the operating band as possible.

(1) Connect an UE simulator operating at the assigned channel frequency of the wanted signal and a signal generator to the antenna connector of one Rx port.

(2) Terminate or disable any other Rx port not under test.

(3) Start transmission from the BS tester to the BS using the UL reference measurement channel (12,2 kbps) defined in Annex A.2.1.The level of the UE simulator signal measured at the BS antenna connector shall be set to 6 dB above the reference sensitivity level specified in subclause 7.2.2.

7.5.4.2 Procedure

7.5.4.2.1 3,84 Mcps TDD option

(1) Set the signal generator to produce an interfering signal at a frequency offset Fuw from the assigned channel frequency of the wanted signal which is given by

$$Fuw = \pm (n \times 1\ MHz),$$

where n shall be increased in integer steps from n = 10 up to such a value that the center frequency of the interfering signal covers the range from 1 MHz to 12,75 GHz. The interfering signal level measured at the antenna connector shall be set in dependency of its center frequency, as specified in tables 7.6 to 7.10. The type of the interfering signal is either equivalent to a continuous wideband CDMA signal with one code of chip frequency 3,84 Mchip/s, filtered by an RRC transmit pulse-shaping filter with roll-off $\alpha = 0,22$, or a CW signal; see tables 7.6 to 7.10.

(2) Measure the BER of the wanted signal at the BS receiver.

(3) Interchange the connections of the BS Rx ports and repeat the measurements according to steps (1) and (2).

NOTE: The test procedure as defined in steps (1) and (2) requests to carry out more than 10000 BER measurements. To reduce the time needed for these measurements, it may be appropriate to conduct the test in two phases: During phase 1, BER measurements are made on all center frequencies of the interfering signal as requested but with a reduced confidence level, with the aim to identify those frequencies which require more detailed investigation. In phase 2, detailed measurements are made only at those critical frequencies identified before, applying the required confidence level.

7.5.4.2.2 1,28 Mcps TDD option

(1) Set the signal generator to produce an interfering signal at a frequency offset Fuw from the assigned channel frequency of the wanted signal which is given by

~~Fuw = ± (n x 1 MHz),~~

Fuw=±(3,2 + n) x 1 MHz,

where n shall be increased in integer steps from n = ~~1~~0 up to such a value that the center frequency of the interfering signal covers the range from 1 MHz to 12,75 GHz. The interfering signal level measured at the antenna connector shall be set in dependency of its center frequency, as specified in tables 7.6A to 7.10A. The type of the interfering signal is either equivalent to a continuous wideband CDMA signal with one code of chip frequency 1,28 Mchip/s, filtered by an RRC transmit pulse-shaping filter with roll-off $\alpha = 0,22$, or a CW signal; see tables 7.6A to 7.10A.

(2) Measure the BER of the wanted signal at the BS receiver.

(3) Interchange the connections of the BS Rx ports and repeat the measurements according to steps (1) and (2).

NOTE: The test procedure as defined in steps (1) and (2) requests to carry out more than 10000 BER measurements. To reduce the time needed for these measurements, it may be appropriate to conduct the test in two phases: During phase 1, BER measurements are made on all center frequencies of the interfering signal as requested but with a reduced confidence level, with the aim to identify those frequencies which require more detailed investigation. In phase 2, detailed measurements are made only at those critical frequencies identified before, applying the required confidence level.

7.5.5 Test Requirements

NOTE: If the Test Requirement below 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.

In all measurements made according to subclause 7.5.4.2, the BER shall not exceed 0,001.