RP-010348

TSG-RAN Meeting #12 Stockholm, Sweden, 12 - 15 June 2001

Title: Agreed CRs (Release '99 and Rel-4 category A) to TS 25.102

Source: TSG-RAN WG4

Agenda item: 8.4.3

| WG4 doc | Status WG4 | Spec | CR | Phase | Title | Cat | V old | V new |
|-----------|---------------|--------|----|-------|---------------------------------------------------------------------------|-----|-------|-------|
| R4-010520 | agreed | 25.102 | 48 | R99 | Correction of signal descriptions in Receiver Characteristics section. | F | 3.6.0 | 3.7.0 |
| R4-010521 | agreed | 25.102 | 49 | Rel-4 | Correction of signal descriptions in Receiver Characteristics section. | A | 4.0.0 | 4.1.0 |
| R4-010524 | agreed | 25.102 | 50 | R99 | UE EVM definition | F | 3.6.0 | 3.7.0 |
| R4-010682 | agreed | 25.102 | 51 | Rel-4 | UE EVM definition | Α | 4.0.0 | 4.1.0 |
| R4-010545 | agreed | 25.102 | 52 | R99 | Clarification of UARFCN channel number | F | 3.6.0 | 3.7.0 |
| R4-010800 | agreed | 25.102 | 53 | Rel-4 | Clarification of UARFCN channel number | Α | 4.0.0 | 4.1.0 |
| R4-010567 | agreed | 25.102 | 54 | R99 | CR for UE Performance Requirements | F | 3.6.0 | 3.7.0 |
| R4-010738 | agreed | 25.102 | 55 | Rel-4 | CR for UE Performance Requirements | A | 4.0.0 | 4.1.0 |
| R4-010676 | agreed | 25.102 | 56 | R99 | Performance Test for Uplink Power Control | F | 3.6.0 | 3.7.0 |
| R4-010755 | agreed | 25.102 | 57 | Rel-4 | Performance Test for Uplink Power Control | A | 4.0.0 | 4.1.0 |
| R4-010677 | agreed | 25.102 | 58 | R99 | Corrections and note status changes from informative to normative | F | 3.6.0 | 3.7.0 |
| R4-010678 | agreed | 25.102 | 59 | Rel-4 | Corrections and note status changes from informative to normative | A | 4.0.0 | 4.1.0 |
| R4-010476 | agreed | 25.102 | 64 | R99 | BCH performance requirement | F | 3.6.0 | 3.7.0 |
| R4-010791 | agreed | 25.102 | 65 | Rel-4 | BCH performance requirement | Α | 4.0.0 | 4.1.0 |

Gothenburg, Sweden 21st - 25th May 2001

| CHANGE REQUEST | | | | | |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
| ¥ | 25.102 CR 48 * ev _ * Current version: 3.6.0 * | | | | |
| For <u>HELP</u> on us | ing this form, see bottom of this page or look at the pop-up text over the X symbols. | | | | |
| Proposed change at | ffects: # (U)SIM ME/UE X Radio Access Network Core Network | | | | |
| Title: ೫ (| Correction of signal descriptions in Receiver Characteristics section. | | | | |
| Source: ೫ | RAN WG4 | | | | |
| Work item code: 🛱 🚺 | TEI Date: # 21.05.2001 | | | | |
| | FRelease: %R99Use one of the following categories:Use one of the following releases:F (correction)2A (corresponds to a correction in an earlier release)R96B (addition of feature),R97C (functional modification of feature)R98D (editorial modification)R99Cetailed explanations of the above categories canREL-4C (Release 4)De found in 3GPP TR 21.900.REL-5 | | | | |
| Reason for change: | # Explicit signal description in blocking and spurious response sections. | | | | |
| Summary of change | Replace unclear notations ("wanted signal" and "unwanted signal") by explicit descriptions. | | | | |
| Consequences if not approved: | * Previous state can lead to misunderstanding. | | | | |
| Clauses affected: | ೫ <mark>7.6.1, 7.7.1</mark> | | | | |
| Other specs affected: | Image: Specification state Image: Specification state Image: Specification state Image: Specification state Image: O&M Specification state Image: Specification state | | | | |
| Other comments: | * This CR is based on a CR already proposed in R4-00040 and agreed in TSG#7 (RP-000016) but partially implemented in 25.102 V3.2.0 | | | | |

How to create CRs using this form:

- 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

7.6 Blocking characteristics

The blocking characteristics is a measure of the receiver ability to receive a wanted signal at is assigned channel frequency in the presence of an unwanted interferer on frequencies other than those of the spurious response or the adjacent channels without this unwanted input signal causing a degradation of the performance of the receiver beyond a specified limit. The blocking performance shall apply at all frequencies except those at which a spurious response occur.

7.6.1 Minimum Requirement

The BER shall not exceed 0.001 for the parameters specified in table 7.6 and table 7.7. For table 7.7 up to 24 exceptions are allowed for spurious response frequencies in each assigned frequency channel when measured using a 1MHz step size.

| Parameter | Offset | Offset | Unit |
|----------------------------------------------------------------------|----------------------------|----------------------------|--------------|
| $\Sigma DPCH _Ec$ | <u>0</u> | <u>0</u> | <u>dB</u> |
| I _{or} | | | |
| $\hat{I}_{or} = \frac{\hat{W}_{onted Signal}}{\text{Level}}$ | <refsens> + 3 dB</refsens> | <refsens> + 3 dB</refsens> | dBm/3.84 MHz |
| I _{ouw} (modulated) Unwanted Signal Level (modulated) | -56 | -44 | dBm/3.84 MHz |
| Fuw (offset) | +10 or –10 | +15 or -15 | MHz |

Table 7.6: In-band blocking

| Parameter | Band 1 | Band 2 | Band 3 | Unit |
|----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-------------------------------------|-----------------|
| $\Sigma DPCH _Ec$ | <u>0</u> | <u>0</u> | <u>0</u> | <u>dB</u> |
| I _{or} | | | | |
| \hat{I}_{or} Wanted Signal Level | <refsens> + 3 dB</refsens> | <refsens> + 3 dB</refsens> | <refsens> + 3 dB</refsens> | dBm/3.84 MHz |
| I <u>ouw (CW) Unwanted Signal Level</u> (CW) | -44 | -30 | -15 | dBm |
| F _{uw} For operation in frequency bands as definded in subclause 5.2(a) | 1840 <f <1885<br="">1935 <f <1995<br="">2040 <f <2085<="" td=""><td>1815 <f <1840<br="">2085 <f <2110<="" td=""><td>1< f <1815 2110< f <12750</td><td>MHz</td></f></f></td></f></f></f> | 1815 <f <1840<br="">2085 <f <2110<="" td=""><td>1< f <1815 2110< f <12750</td><td>MHz</td></f></f> | 1< f <1815 2110< f <12750 | MHz |
| F _{uw} For operation in frequency bands as definded in subclause 5.2(b) | 1790 < f < 1835 2005 < f < 2050 | 1765 < f < 1790 2050 < f < 2075 | 1 < f < 1765 2075 < f < 12750 | MHz |
| F _{uw} For operation in frequency bands as definded in subclause 5.2(c) | 1850 < f < 1895 1945 < f < 1990 | 1825 < f < 1850 1990 < f < 2015 | 1 < f < 1825 2015 < f < 12750 | MHz |

Table 7.7: Out of band blocking

NOTES: 1. For operation referenced in 5.2(a), from 1885 <f< 1900 MHz, 1920 <f< 1935 MHz, 1995 <f< 2010 MHz and 2025 <f< 2040 MHz , the appropriate in-band blocking or adjacent channel selectivity in section 7.5.1 shall be applied.

- 2. For operation referenced in 5.2(b), from 1835 < f < 1850 MHz and 1990< f < 2005 MHz, the appropriate in-band blocking or adjacent channel selectivity in section 7.5.1 shall be applied.
- 3. For operation referenced in 5.2(c), from 1895 < f < 1910 MHz and 1930 < f < 1945 MHz, the appropriate in-band blocking or adjacent channel selectivity in section 7.5.1 shall be applied.

7.7 Spurious response

Spurious response is a measure of the receiver's ability to receive a wanted signal on its assigned channel frequency without exceeding a given degradation due to the presence of an unwanted CW interfering signal at any other frequency at which a response is obtained i.e. for which the blocking limit is not met.

7.7.1 Minimum Requirement

The BER shall not exceed 0.001 for the parameters specified in Table 7.8.

| Table 7.8 | Spurious | Response |
|-----------|----------|----------|
|-----------|----------|----------|

| Parameter | Level | Unit | |
|------------------------------|----------------------------------|--------------|--|
| $\Sigma DPCH _Ec$ | <u>0</u> | <u>dB</u> | |
| I _{or} | | | |
| \hat{I}_{or} Wanted Signal | <refsens> + 3 dB</refsens> | dBm/3.84 MHz | |
| Level | | | |
| I ouw (CW) Unwanted | -44 | dBm | |
| Signal Level (CW) | | | |
| Fuw | Spurious response frequencies | MHz | |

Gothenburg, Sweden 21st - 25th May 2001

| CR-Form-v4 CHANGE REQUEST | | | | | |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
| ж | 25.102 CR 49 # ev - # Current version: 4.0.0 # | | | | |
| For <u>HELP</u> on us | sing this form, see bottom of this page or look at the pop-up text over the \Re symbols. | | | | |
| Proposed change a | affects: # (U)SIM ME/UE X Radio Access Network Core Network | | | | |
| Title: ೫ | Correction of signal descriptions in Receiver Characteristics section. | | | | |
| Source: ೫ | RAN WG4 | | | | |
| Work item code: # | TEI Date: # 21.05.2001 | | | | |
| Category: ₩ | ARelease: %REL-4Use one of the following categories:Use one of the following releases:F (correction)2A (corresponds to a correction in an earlier release)R96B (addition of feature),R97C (functional modification of feature)R98D (editorial modification)R99D (editorial modification)R99Detailed explanations of the above categories canREL-4be found in 3GPP TR 21.900.REL-5 | | | | |
| Reason for change | : # Explicit signal description in blocking and spurious response sections. | | | | |
| Summary of chang | e: # Replace unclear notations ("wanted signal" and "unwanted signal") by explicit descriptions. | | | | |
| Consequences if not approved: | # Previous state can lead to misunderstanding. | | | | |
| Clauses affected: | ₩ 7.6.1.1,7.6.1.2, 7.7.1.1,7.7.1.2 | | | | |
| Other specs affected: | # Other core specifications # Test specifications O&M Specifications | | | | |
| Other comments: | * This CR is based on a CR already proposed in R4-00040 and agreed in TSG#7 (RP-000016) but partially implemented in 25.102 V3.2.0 | | | | |

How to create CRs using this form:

- 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

7.6 Blocking characteristics

The blocking characteristics is a measure of the receiver ability to receive a wanted signal at is assigned channel frequency in the presence of an unwanted interferer on frequencies other than those of the spurious response or the adjacent channels without this unwanted input signal causing a degradation of the performance of the receiver beyond a specified limit. The blocking performance shall apply at all frequencies except those at which a spurious response occur.

7.6.1 Minimum Requirement

7.6.1.1 3.84 Mcps TDD Option

The BER shall not exceed 0.001 for the parameters specified in table 7.6 and table 7.7. For table 7.7 up to 24 exceptions are allowed for spurious response frequencies in each assigned frequency channel when measured using a 1MHz step size.

| Parameter | Offset | Offset | Unit |
|----------------------------------------------------------------------|----------------------------|----------------------------|--------------|
| $\Sigma DPCH _Ec$ | <u>0</u> | <u>0</u> | <u>dB</u> |
| I _{or} | | | |
| $\frac{\hat{I}_{or}}{\frac{\text{Wanted Signal}}{\text{Level}}}$ | <refsens> + 3 dB</refsens> | <refsens> + 3 dB</refsens> | dBm/3.84 MHz |
| I _{ouw} (modulated) Unwanted Signal Level (modulated) | -56 | -44 | dBm/3.84 MHz |
| Fuw (offset) | +10 or –10 | +15 or -15 | MHz |

Table 7.6: In-band blocking (3.84 Mcps TDD Option)

Table 7.7: Out of band blocking (3.84 Mcps TDD Option)

| Parameter | Band 1 | Band 2 | Band 3 | Unit |
|----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-------------------------------------|-----------------|
| $\Sigma DPCH _Ec$ | <u>0</u> | <u>0</u> | <u>0</u> | <u>dB</u> |
| I _{or} | | | | |
| Î _{or} Wanted Signal Level | <refsens> + 3 dB</refsens> | <refsens> + 3 dB</refsens> | <refsens> + 3 dB</refsens> | dBm/3.84 MHz |
| I ouw (CW) Unwanted Signal Level | -44 | -30 | -15 | dBm |
| F _{uw} For operation in frequency bands as definded in subclause 5.2(a) | 1840 <f <1885<br="">1935 <f <1995<br="">2040 <f <2085<="" td=""><td>1815 <f <1840<br="">2085 <f <2110<="" td=""><td>1< f <1815 2110< f <12750</td><td>MHz</td></f></f></td></f></f></f> | 1815 <f <1840<br="">2085 <f <2110<="" td=""><td>1< f <1815 2110< f <12750</td><td>MHz</td></f></f> | 1< f <1815 2110< f <12750 | MHz |
| F _{uw} For operation in frequency bands as definded in subclause 5.2(b) | 1790 < f < 1835 2005 < f < 2050 | 1765 < f < 1790 2050 < f < 2075 | 1 < f < 1765 2075 < f < 12750 | MHz |
| F _{uw} For operation in frequency bands as definded in subclause 5.2(c) | 1850 < f < 1895 1945 < f < 1990 | 1825 < f < 1850 1990 < f < 2015 | 1 < f < 1825 2015 < f < 12750 | MHz |

NOTES:

 For operation referenced in 5.2(a), from 1885 <f< 1900 MHz, 1920 <f< 1935 MHz, 1995 <f< 2010 MHz and 2025<f< 2040 MHz, the appropriate in-band blocking or adjacent channel selectivity in section 7.5.1 shall be applied. **Release 4**

- 2) For operation referenced in 5.2(b), from 1835 < f < 1850 MHz and 1990< f < 2005 MHz, the appropriate inband blocking or adjacent channel selectivity in section 7.5.1 shall be applied.
- 3) For operation referenced in 5.2(c), from 1895 < f < 1910 MHz and 1930< f < 1945 MHz, the appropriate inband blocking or adjacent channel selectivity in section 7.5.1 shall be applied.

7.6.1.2 1.28 Mcps TDD Option

The BER shall not exceed 0.001 for the parameters specified in table 7.6A and table 7.7A.

Table 7.6A: In-band blocking (1.28 Mcps TDD Option)

| Parameter | Offset | Offset | Unit |
|----------------------------------------------|----------------------------|----------------------------|--------------|
| $\Sigma DPCH _Ec$ | <u>0</u> | <u>0</u> | <u>dB</u> |
| I | | | |
| \hat{I}_{or} Wanted Signal Level | <refsens> + 3 dB</refsens> | <refsens> + 3 dB</refsens> | dBm/1.28 MHz |
| I _{ouw} (modulated) Unwanted Signal | -61 | -49 | dBm/1.28 MHz |
| F _{uw} (offset) | +3.2 or -3.2 | +4.8 or -4.8 | MHz |

| Parameter | Band 1 | Band 2 | Band 3 | Unit |
|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|----------------------------------|-----------------|
| $\Sigma DPCH _Ec$ | <u>0</u> | <u>0</u> | <u>0</u> | <u>dB</u> |
| I _{or} | | | | |
| Î _{or} -Wanted Signal Level | <refsens> + 3 dB</refsens> | <refsens> + 3 dB</refsens> | <refsens> + 3 dB</refsens> | dBm/1.28 MHz |
| I _{ouw} (CW) Unwanted Signal | -44 | -30 | -15 | dBm |
| F _{uw} For operation in frequency bands as definded in subclause 5.2(a) | 1840 <f <1895.2<br="">1924.8 <f <2005.2<br="">2029.8 <f <2085<="" td=""><td>1815 <f <1840<br="">2085 <f <2110<="" td=""><td>1< f <1815 2110< f <12750</td><td>MHz</td></f></f></td></f></f></f> | 1815 <f <1840<br="">2085 <f <2110<="" td=""><td>1< f <1815 2110< f <12750</td><td>MHz</td></f></f> | 1< f <1815 2110< f <12750 | MHz |
| F _{uw} For operation in frequency bands as definded in subclause 5.2(b) | 1790 < f < 1845.2 1994.8 < f < 2050 | 1765 < f < 1790 2050 < f < 2075 | 1 < f < 1765 2075 < f < 12750 | MHz |
| F _{uw} For operation in frequency bands as definded in subclause 5.2(c) | 1850 < f < 1905.2 1934.8 < f < 1990 | 1825 < f < 1850 1990 < f < 2015 | 1 < f < 1825 2015 < f < 12750 | MHz |

NOTES:

- For operation referenced in 5.2(a), from 1895.2 <f< 1900 MHz, 1920 <f< 1924.8 MHz, 2005.2 <f< 2010 MHz and 2025<f< 2029.8 MHz , the appropriate in-band blocking or adjacent channel selectivity in section 7.5.1.2shall be applied.
- 2) For operation referenced in 5.2(b), from 1845.2 < f < 1850 MHz and 1990< f < 1994.8 MHz, the appropriate in-band blocking or adjacent channel selectivity in section 7.5.1.2 shall be applied.
- 3) For operation referenced in 5.2(c), from 1905.2 < f < 1910 MHz and 1930< f < 1934.8 MHz, the appropriate in-band blocking or adjacent channel selectivity in section 7.5.1.2 shall be applied.

7.7 Spurious response

Spurious response is a measure of the receiver's ability to receive a wanted signal on its assigned channel frequency without exceeding a given degradation due to the presence of an unwanted CW interfering signal at any other frequency at which a response is obtained i.e. for which the blocking limit is not met.

7.7.1 Minimum Requirement

7.7.1.1 3.84 Mcps TDD Option

The BER shall not exceed 0.001 for the parameters specified in Table 7.8.

Table 7.8: Spurious Response (3.84 Mcps TDD Option)

| Parameter | Level | Unit |
|------------------------------|----------------------------------|--------------|
| $\Sigma DPCH _Ec$ | <u>0</u> | <u>dB</u> |
| I _{or} | | |
| \hat{I}_{or} Wanted Signal | | dBm/3.84 MHz |
| Level | <refsens> + 3 dB</refsens> | |
| I ouw (CW) Unwanted | -44 | dBm |
| Signal Level (CW) | | |
| Fuw | Spurious response frequencies | MHz |

7.7.1.2 1.28 Mcps TDD Option

The BER shall not exceed 0.001 for the parameters specified in Table 7.8A.

| Table 7.8A: | Spurious Response (1.28 Mcps TDD Option) |
|-------------|------------------------------------------|
|-------------|------------------------------------------|

| Parameter | Level | Unit |
|--------------------------------------------------------|----------------------------------|--------------|
| $\frac{\Sigma DPCH_Ec}{I_{or}}$ | <u>0</u> | <u>dB</u> |
| Î _{or} <u>Wanted Signal</u> | | dBm/1.28 MHz |
| Level | <refsens> + 3 dB</refsens> | |
| I _{ouw} (CW) Unwanted Signal Level (CW) | -44 | dBm |
| F _{uw} | Spurious response frequencies | MHz |

R4-010524

Gothenburg, Sweden 21st - 25th May 2001

| | | CR-Form-v4 |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| | CHANGE RI | EQUESI |
| æ | 25.102 CR 50 [#] | ev _ [#] Current version: 3.6.0 [#] |
| For <u>HELP</u> on u | sing this form, see bottom of this pag | the or look at the pop-up text over the $#$ symbols. |
| Proposed change | ffects: ¥ (U)SIM ME/UE | X Radio Access Network Core Network |
| Title: ೫ | UE EVM definition | |
| Source: # | RAN WG4 | |
| Work item code: ೫ | TEI | Date: 業 21.05.2001 |
| Category: | F Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in a B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories be found in 3GPP <u>TR 21.900</u>. | re) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) |
| Reason for change | | 1 is not correct and needs updating. |
| Summary of chang | | ted to exclude errors due to frequency, phase, and atched RRC filter in the measurement. |
| Consequences if not approved: | # Ambiguity and errors in the EV measurement results. | /M definition may lead to non-consistent |
| Clauses affected: | ₩ <mark>6.8.2</mark> | |
| Other specs affected: | Content core specifications Test specifications O&M Specifications | ¥ TS 34.122 |
| Other comments: | ¥ | |

How to create CRs using this form:

- 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

6.8.2 Error Vector Magnitude

The Error Vector Magnitude is a measure of the difference between the measured waveform and the theoretical modulated waveform (the error vector). It is the square root of the ratio of the mean error vector power to the mean r efference signal power expressed as a %. The measurement interval is one timeslot.

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The Error Vector Magnitude is a measure of the difference between the reference waveform and the measured waveform. This difference is called the error vector. Both waveforms pass through a matched Root Raised Cosine filter with bandwidth 3,84 MHz and roll-off α =0,22. Both waveforms are then further modified by selecting the frequency, absolute phase, absolute amplitude and chip clock timing so as to minimise the error vector. The EVM result is defined as the square root of the ratio of the mean error vector power to the mean reference power expressed as a %. The measurement interval is one timeslot. See Annex B of TS 34.122 for further details.

R4-010682

Gothenburg, Sweden 21st - 25th May 2001

| | | CR-Form-v4 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| | CHANGE REQUE | ST |
| ж | 25.102 CR 51 [#] ev - | # Current version: 4.0.0 # |
| For <u>HELP</u> on L | sing this form, see bottom of this page or look | x at the pop-up text over the $#$ symbols. |
| Proposed change | affects: ೫ (U)SIM ME/UE X Rad | dio Access Network Core Network |
| Title: ೫ | UE EVM definition | |
| Source: ೫ | RAN WG4 | |
| Work item code: # | TEI | Date: |
| Category: # | A Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier r B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP <u>TR 21.900</u>. | R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) |
| Reason for change: # The present definition of EVM is not correct and needs updating. Summary of change: # The definition of EVM is updated to exclude errors due to frequency, phase, and | | |
| | amplitude, and to include a matched R are taken into account. | RC filter in the measurement. Both modes |
| Consequences if not approved: | * Ambiguity and errors in the EVM definition measurement results. | tion may lead to non-consistent |
| Clauses affected: | ¥ <mark>6.8.2</mark> | |
| Other specs affected: | #Other core specifications#XTest specificationsTSO&M SpecificationsTS | S 34.122 |
| Other comments: | ¥ | |

How to create CRs using this form:

- 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 <u>ftp://ftp.3gpp.org/specs/</u> 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 requests.

6.8.2 Error Vector Magnitude

The Error Vector Magnitude is a measure of the difference between the measured waveform and the theoretical modulated waveform (the error vector). It is the square root of the ratio of the mean error vector power to the mean r efference signal power expressed as a %. The measurement interval is one timeslot.

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The Error Vector Magnitude is a measure of the difference between the reference waveform and the measured waveform. This difference is called the error vector. Both waveforms pass through a matched Root Raised Cosine filter with bandwidth corresponding to the considered chip rate and roll-off α =0,22. Both waveforms are then further modified by selecting the frequency, absolute phase, absolute amplitude and chip clock timing so as to minimise the error vector. The EVM result is defined as the square root of the ratio of the mean error vector power to the mean reference power expressed as a %. The measurement interval is one timeslot. See Annex B of TS 34.122 for further details.

R4-010545

Gothenburg, Sweden 21st - 25th May 2001

| [| CR-Form |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | CHANGE REQUEST |
| ^ж <mark>25.10</mark> 2 | 2 CR 52 [#] rev - [#] Current version: 3.6.0 [#] |
| For <u>HELP</u> on | using this form, see bottom of this page or look at the pop-up text over the $#$ symbols. |
| Proposed change | e affects: ¥ (U)SIM ME/UE X Radio Access Network Core Network |
| Title: 3 | Clarification of UARFCN channel number |
| Source: | RAN WG4 |
| Work item code: ३ | 策 TEI Date: 第 18. Apr. 2001 |
| Category: ៖ | ቹ <mark>F</mark> Release: ቹ R99 |
| | Use one of the following categories:Use one of the following releases:F (essential correction)2(GSM Phase 2)A (corresponds to a correction in an earlier release)R96(Release 1996)B (Addition of feature),R97(Release 1997)C (Functional modification of feature)R98(Release 1998)D (Editorial modification)R99(Release 1999)Detailed explanations of the above categories can be found in 3GPP TR 21.900.REL-4(Release 4) REL-5 |
| Reason for chang | ge: # Ambiguity in required UARFCN range |
| Summary of chan | rge: # The range of UARFCN is specified for each frequency band |
| Consequences if not approved: | Performance of UTRA is degraded due to possible cell selection time. High and low channel is now identified |
| Clauses affected: | X New subclause 5.4.4 |
| Other specs affected: | % Other core specifications % X Test specifications TS 34.122 O&M Specifications TS 34.122 |
| Other comments: | x X |

How to create CRs using this form:

- 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 <u>ftp://www.3gpp.org/specs/</u> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

5 Frequency bands and channel arrangement

5.1 General

The information presented in this section is based on a chip rate of 3.84 Mcps.

NOTE: Other chip rates may be considered in future releases.

5.2 Frequency bands

UTRA/TDD is designed to operate in the following bands;

| a) | 1900 – 1920 MHz: | Uplink and downlink transmission |
|-----|------------------|----------------------------------|
| | 2010 – 2025 MHz | Uplink and downlink transmission |
| b)* | 1850 – 1910 MHz: | Uplink and downlink transmission |
| | 1930 – 1990 MHz: | Uplink and downlink transmission |

c)* 1910 – 1930 MHz: Uplink and downlink transmission

* Used in ITU Region 2

Additional allocations in ITU region 2 are FFS.

Deployment in existing or other frequency bands is not precluded.

5.3 TX–RX frequency separation

No TX-RX frequency separation is required as Time Division Duplex (TDD) is employed. Each TDMA frame consists of 15 timeslots where each timeslot can be allocated to either transmit or receive.

5.4 Channel arrangement

5.4.1 Channel spacing

The nominal channel spacing is 5 MHz, but this can be adjusted to optimise performance in a particular deployment scenario.

5.4.2 Channel raster

The channel raster is 200 kHz, which means that the carrier frequency must be a multiple of 200 kHz.

5.4.3 Channel number

The carrier frequency is designated by the UTRA absolute radio frequency channel number (UARFCN). The value of the UARFCN in the IMT2000 band is defined as follows:

 $N_t = 5^*F$

0.0 MHz \leq F \leq 3276.6 MHz

where F is the carrier frequency in MHz

5.4.4. UARFCN

The following UARFCN range shall be supported for each band.

| Frequency Band | Frequency Range | UARFCN Uplink and |
|----------------------------|----------------------|-----------------------|
| | | Downlink transmission |
| | | |
| For operation in frequency | <u>1900-1920 MHz</u> | <u>9512 to 9588</u> |
| band as defined in | | |
| subclause 5.2 (a) | <u>2010-2025 MHz</u> | <u>10062 to 10113</u> |
| | | |
| For operation in frequency | 1850-1910 MHz | 9262 to 9538 |
| band as defined in | | |
| subclause 5.2 (b) | <u>1930-1990 MHz</u> | <u>9662 to 9938</u> |
| <u></u> | | |
| For operation in frequency | 1910-1930 MHz | 9562 to 9638 |
| band as defined in | | |
| subclause 5.2 (c) | | |
| <u></u> | | |

Table 5.1: UTRA Absolute Radio Frequency Channel Number

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| | CR | -Form-v4 |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| | CHANGE REQUEST | |
| [#] <mark>25.102</mark> | CR 53 [#] rev _ [#] Current version: 4.0.0 [#] | |
| For <u>HELP</u> on us | sing this form, see bottom of this page or look at the pop-up text over the X symbo | ols. |
| Proposed change a | affects: # (U)SIM ME/UE X Radio Access Network Core Netwo | ork |
| Title: ೫ | Clarification of UARFCN channel number | |
| Source: ೫ | RAN WG4 | |
| Work item code: ℜ | TEI Date: # 31.May 2001 | |
| Category: ೫ | A Release: # REL-4 | |
| | Use one of the following categories:Use one of the following releaseF (correction)2(GSM Phase 2)A (corresponds to a correction in an earlier release)R96(Release 1996)B (Addition of feature),R97(Release 1997)C (Functional modification of feature)R98(Release 1998)D (Editorial modification)R99(Release 1999)Detailed explanations of the above categories canREL-4(Release 4)be found in 3GPP TR 21.900.REL-5(Release 5) | es: |
| Reason for change | E: # REL-4 Cat A CR corresponding to R99 CR Tdoc R4-010545 | |
| Summary of chang | | D |
| Consequences if not approved: | % Inconsistencys between releases. | |
| Clauses affected: | 策 New subclause 5.4.4 | |
| Other specs affected: | % Other core specifications % X Test specifications TS 34.122 O&M Specifications V | |
| Other comments: | × | |

How to create CRs using this form:

- 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

5 Frequency bands and channel arrangement

5.1 General

The information presented in this section is based on the chip rates of 3.84 Mcps Option and 1.28 Mcps Option..

NOTE: Other chip rates may be considered in future releases.

5.2 Frequency bands

UTRA/TDD is designed to operate in the following bands;

| a) | 1900 – 1920 MHz: | Uplink and downlink transmission |
|-----|------------------|----------------------------------|
| | 2010 – 2025 MHz | Uplink and downlink transmission |
| b)* | 1850 – 1910 MHz: | Uplink and downlink transmission |

1930 – 1990 MHz: Uplink and downlink transmission

c)* 1910 – 1930 MHz: Uplink and downlink transmission

* Used in ITU Region 2

Additional allocations in ITU region 2 are FFS.

Deployment in existing or other frequency bands is not precluded.

5.3 TX–RX frequency separation

5.3.1 3.84 Mcps TDD Option

No TX-RX frequency separation is required as Time Division Duplex (TDD) is employed. Each TDMA frame consists of 15 timeslots where each timeslot can be allocated to either transmit or receive.

5.3.2 1.28 Mcps TDD Option

No TX-RX frequency separation is required as Time Division Duplex (TDD) is employed. Each subframe consists of 7 main timeslots where all main timeslots (at least the first one) before the single switching point are allocated DL and all main timeslots (at least the last one) after the single switching point are allocated UL.

5.4 Channel arrangement

5.4.1 Channel spacing

5.4.1.1 3.84 Mcps TDD Option

The nominal channel spacing is 5 MHz, but this can be adjusted to optimise performance in a particular deployment scenario.

5.4.1.2 1.28 Mcps TDD Option

The nominal channel spacing is 1.6 MHz, but this can be adjusted to optimise performance in a particular deployment scenario.

5.4.2 Channel raster

The channel raster is 200 kHz, which means that the carrier frequency must be a multiple of 200 kHz.

5.4.3 Channel number

The carrier frequency is designated by the UTRA absolute radio frequency channel number (UARFCN). The value of the UARFCN in the IMT2000 band is defined as follows:

 $N_t = 5^*F \qquad \qquad 0.0 \text{ MHz} \le F \le 3276.6 \text{ MHz}$

where F is the carrier frequency in MHz

5.4.4. UARFCN

5.4.4.1 3.84 Mcps TDD Option

The following UARFCN range shall be supported for each band.

Table 5.1: UTRA Absolute Radio Frequency Channel Number 3.84 Mcps TDD Option

| Frequency Band | Frequency Range | <u>UARFCN Uplink and</u> <u>Downlink transmission</u> |
|------------------------------------------------------------------------------|----------------------------------------------|----------------------------------------------------------|
| For operation in frequency band as defined in subclause 5.2 (a) | <u>1900-1920 MHz</u> 2010-2025 MHz | <u>9512 to 9588</u> <u>10062 to 10113</u> |
| For operation in frequency band as defined in subclause 5.2 (b) | <u>1850-1910 MHz</u> <u>1930-1990 MHz</u> | <u>9262 to 9538</u> <u>9662 to 9938</u> |
| For operation in frequency band as defined in subclause <u>5.2 (c)</u> | <u>1910-1930 MHz</u> | <u>9562 to 9638</u> |

5.4.4.2 1.28 Mcps TDD Option

(void)

CR-Form-v3 CHANGE REQUEST ж 25.102 CR 54 ж ₩ rev ж Current version: 3.6.0 X For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the *x* symbols. (U)SIM ME/UE X Radio Access Network Core Network Proposed change affects: # Title: ^{**#**} UE Performance Requirements for 12.2 kbps, 64 kbps, 144 kbps and 384 kbps Source: **% RAN WG4** Work item code: # TEI Date: # May 21, 2001 жF Release: # R99 Category: Use one of the following categories: Use one of the following releases: **F** (essential correction) (GSM Phase 2) 2 A (corresponds to a correction in an earlier release) (Release 1996) R96 B (Addition of feature), R97 (Release 1997) **C** (Functional modification of feature) R98 (Release 1998) **D** (Editorial modification) R99 (Release 1999) Detailed explanations of the above categories can REL-4 (Release 4) be found in 3GPP TR 21.900. REL-5 (Release 5)

| Reason for change: | Existing performance requirements do not take into account cell parameter cycling which is mandatory. |
|----------------------------------|-------------------------------------------------------------------------------------------------------|
| Summary of change: | # UE Performance Requirements are revised in Section 8. |
| Consequences if not approved: | # UE testing would require a special test mode. |
| | |
| Clauses affected: | # 8.2.1.1, 8.3.1.1, 8.3.2.1, 8.3.3.1 |
| | |
| Other specs Affected: | # Other core specifications # Test specifications O&M Specifications |
| | |
| Other comments: | ೫ |

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8.2 Demodulation in static propagation conditions

8.2.1 Demodulation of DCH

The performance requirement of DCH in static propagation conditions is determined by the maximum Block Error Ratio (BLER). The BLER is specified for each individual data rate of the DCH. DCH is mapped into the Dedicated Physical Channel (DPCH).

8.2.1.1 Minimum requirement

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.

| Parameters | Unit | Test 1 | Test 2 | Test 3 | Test 4 | | | |
|-----------------------|---------------|----------------------|---------------------|---------------------|---------------------|--|--|--|
| $\Sigma DPCH _E_c$ | dB | -6 | -3 | 0 | 0 | | | |
| I _{or} | | | | | | | | |
| l _{oc} | dBm/3.84 MHz | -60 | | | | | | |
| Cell Parameter* | | 0,1 | | | | | | |
| DPCH Channelization | <u>C(k,Q)</u> | <u>C(i,16) i=1,2</u> | <u>C(i,16) i=15</u> | <u>C(i,16) i=19</u> | <u>C(i,16) i=18</u> | | | |
| Codes* | | | | | | | | |
| OCNS Channelization | <u>C(k,Q)</u> | <u>C(3,16)</u> | <u>C(6,16)</u> | - | 2 | | | |
| Code* | | | | | | | | |
| Information Data Rate | kbps | 12.2 | 64 | 144 | 384 | | | |

Table 8.2: DCH parameters in static propagation conditions

*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 | 0.1<u>1.1</u> | 10 ⁻² |
| 2 | 2.3 3.5 | 10 ⁻¹ |
| | 2.6 <u>3.8</u> | 10 ⁻² |
| 3 | <u>2.23.4</u> | 10 ⁻¹ |
| | 2.4<u>3.6</u> | 10 ⁻² |
| 4 | 1.6<u>2.7</u> | 10 ⁻¹ |
| | 1.8<u>3.0</u> | 10 ⁻² |

8.3 Demodulation of DCH in multipath fading conditions

8.3.1 Multipath fading Case 1

The performance requirement of DCH is determined by the maximum Block Error Ratio (BLER). The BLER is specified for each individual data rate of the DCH. DCH is mapped into the Dedicated Physical Channel (DPCH).

8.3.1.1 Minimum requirement

For the parameters specified in Table 8.4 the BLER should not exceed the piece-wise linear BLER curve specified in Table 8.5. These requirement are applicable for TFCS size 16.

| Parameters | Unit | Test 1 | Test 2 | Test 3 | Test 4 | | |
|-----------------------|---------------|----------------------|---------------------|---------------------|---------------------|--|--|
| $\Sigma DPCH _E_c$ | DB | -6 | -3 | 0 | 0 | | |
| I _{or} | | | | | | | |
| I _{oc} | dBm/3.84 MHz | -60 | | | | | |
| Cell Parameter* | | 0,1 | | | | | |
| DPCH Channelization | <u>C(k,Q)</u> | <u>C(i,16) i=1,2</u> | <u>C(i,16) i=15</u> | <u>C(i,16) i=19</u> | <u>C(i,16) i=18</u> | | |
| Codes* | | | | | | | |
| OCNS Channelization | <u>C(k,Q)</u> | <u>C(3,16)</u> | <u>C(6,16)</u> | <u>-</u> | <u>-</u> | | |
| Code* | | | | | | | |
| Information Data Rate | kbps | 12.2 | 64 | 144 | 384 | | |

Table 8.4: DCH parameters in multipath Case 1 channel

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

| Test Number | $\frac{\hat{I}_{or}}{I_{oc}} \text{[dB]}$ | BLER |
|-------------|-------------------------------------------|------------------|
| 1 | 13.5 13.9 | 10 ⁻² |
| 2 | 13.3 13.7 | 10 ⁻¹ |
| | 19.6<u>19.8</u> | 10 ⁻² |
| 3 | 13.3<u>14.1</u> | 10 ⁻¹ |
| | 19.7 20.6 | 10 ⁻² |
| 4 | 13.5<u>13.8</u> | 10 ⁻¹ |
| | 20.2 20.0 | 10 ⁻² |

8.3.2 Multipath fading Case 2

The performance requirement of DCH is determined by the maximum Block Error Ratio (BLER). The BLER is specified for each individual data rate of the DCH. DCH is mapped into the Dedicated Physical Channel (DPCH).

8.3.2.1 Minimum requirement

For the parameters specified in Table 8.6 the BLER should not exceed the piece-wise linear BLER curve specified in Table 8.7. These requirements are applicable for TFCS size 16.

| Parameters | Unit | Test 1 | Test 2 | Test 3 | Test 4 | | | |
|-------------------------------|---------------|----------------------|---------------------|---------------------|---------------------|--|--|--|
| $\Sigma DPCH _E_c$ | DB | -3 | 0 | 0 | 0 | | | |
| I _{or} | | | | | | | | |
| l _{oc} | dBm/3.84 MHz | -60 | | | | | | |
| Cell Parameter* | | | <u>0</u> | <u>,1</u> | | | | |
| DPCH Channelization Codes* | <u>C(k,Q)</u> | <u>C(i,16) i=1,2</u> | <u>C(i,16) i=15</u> | <u>C(i,16) i=19</u> | <u>C(i,16) i=18</u> | | | |
| OCNS Channelization Code* | <u>C(k,Q)</u> | <u>C(3,16)</u> | 2 | - | = | | | |
| Information Data Rate | kbps | 12.2 | 64 | 144 | 384 | | | |

 Table 8.6: DCH parameters in multipath Case 2 channel

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

| Test Number | $\frac{\hat{I}_{or}}{I_{oc}}$ [dB] | BLER |
|-------------|------------------------------------|------------------|
| 1 | 5.5 5.8 | 10 ⁻² |
| 2 | 5.8 <u>5.7</u> | 10 ⁻¹ |
| | 9.7 9.2 | 10 ⁻² |
| 3 | 9.5 9.3 | 10 ⁻¹ |
| | 13.2 12.7 | 10 ⁻² |
| 4 | 8.5 8.8 | 10 ⁻¹ |
| | 12.6 12.0 | 10 ⁻² |

Table 8.7: Performance requirements in multipath Case 2 channel.

8.3.3 Multipath fading Case 3

The performance requirement of DCH is determined by the maximum Block Error Ratio (BLER). The BLER is specified for each individual data rate of the DCH. DCH is mapped into the Dedicated Physical Channel (DPCH).

8.3.3.1 Minimum requirement

For the parameters specified in Table 8.8 the BLER should not exceed the piece-wise linear BLER curve specified in Table 8.9. These requirements are applicable for TFCS size 16.

| Parameters | Unit | Test 1 | Test 2 | Test 3 | Test 4 | | | |
|-------------------------------|---------------|----------------------|---------------------|---------------------|---------------------|--|--|--|
| $\Sigma DPCH _ E_c$ | dB | -3 | 0 | 0 | 0 | | | |
| I _{or} | | | | | | | | |
| l _{oc} | dBm/3.84 MHz | -60 | | | | | | |
| Cell Parameter* | | 0,1 | | | | | | |
| DPCH Channelization Codes* | <u>C(k,Q)</u> | <u>C(i,16) i=1,2</u> | <u>C(i,16) i=15</u> | <u>C(i,16) i=19</u> | <u>C(i,16) i=18</u> | | | |
| OCNS Channelization Code* | <u>C(k,Q)</u> | <u>C(3,16)</u> | = | - | = | | | |
| Information Data Rate | kbps | 12.2 | 64 | 144 | 384 | | | |
| | | | | | | | | |

Table 8.8: DCH parameters in multipath Case 3 channel

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

Table 8.9: Performance requirements in multipath Case 3 channel.

| Test Number | $\frac{\hat{I}_{or}}{I_{oc}}$ [dB] | BLER |
|-------------|------------------------------------|------------------|
| 12.2 kbps | <u>4.74.8</u> | 10 ⁻² |
| 64 kbps | 5.2 5.8 | 10 ⁻¹ |
| | 8.4<u>8.5</u> | 10 ⁻² |
| | 12.1<u>10.7</u> | 10 ⁻³ |
| 144 kbps | 11.7 10.3 | 10 ⁻¹ |
| | 15.2 13.3 | 10 ⁻² |
| | 17.8<u>16.0</u> | 10 ⁻³ |
| 384 kbps | 8.2 8.9 | 10 ⁻¹ |
| | 11.3 11.5 | 10 ⁻² |
| | 13.0 13.6 | 10 ⁻³ |

CR-Form-v4 CHANGE REQUEST ж 25.102 CR 55 ж ₩ rev ж Current version: Х 4.0.0 For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the *x* symbols. (U)SIM ME/UE X Radio Access Network Core Network Proposed change affects: # Title: ^{**#**} UE Performance Requirements for 12.2 kbps, 64 kbps, 144 kbps and 384 kbps Source: **% RAN WG4** Work item code: # TEI Date: # May 21, 2001 Release: # REL-4 Category: ж А Use one of the following categories: Use one of the following releases: F (correction) (GSM Phase 2) 2 A (corresponds to a correction in an earlier release) R96 (Release 1996) B (Addition of feature), R97 (Release 1997) **C** (Functional modification of feature) R98 (Release 1998) **D** (Editorial modification) R99 (Release 1999) Detailed explanations of the above categories can REL-4 (Release 4) be found in 3GPP TR 21.900. REL-5 (Release 5)

| Reason for change: | ж | Existing performance requirements do not take into account cell parameter cycling which is mandatory. | | | | | |
|----------------------------------|-----|-------------------------------------------------------------------------------------------------------|-----------------------------------------------|-----------------------|--|--|--|
| Summary of change | : X | UE Performance Requirements | are | revised in Section 8. | | | |
| Consequences if not approved: | ж | UE testing would require a spe | UE testing would require a special test mode. | | | | |
| | | | | | | | |
| Clauses affected: | ж | 8.2.1.1, 8.3.1.1, 8.3.2.1, 8.3.3.1 | | | | | |
| | | | | | | | |
| Other specs Affected: | ж | Other core specifications X Test specifications O&M Specifications | Ħ | 34.122 | | | |
| Other comments: | ж | | | | | | |

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8.2 Demodulation in static propagation conditions

8.2.1 Demodulation of DCH

The performance requirement of DCH in static propagation conditions is determined by the maximum Block Error Ratio (BLER). The BLER is specified for each individual data rate of the DCH. DCH is mapped into the Dedicated Physical Channel (DPCH).

8.2.1.1 Minimum requirement

8.2.1.1.1 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.

| Parameters | Unit | Test 1 | Test 2 | Test 3 | Test 4 | Test 5 |
|-----------------------|---------------|----------------|----------------|----------------|----------------|----------|
| $\Sigma DPCH _E_c$ | dB | -6 | -3 | 0 | 0 | 0 |
| I _{or} | | | | | | |
| l _{oc} | dBm/3.84 MHz | | | -60 | | |
| Cell Parameter* | | | <u>0</u> | <u>,1</u> | | <u> </u> |
| <u>DPCH</u> | <u>C(k,Q)</u> | <u>C(i,16)</u> | <u>C(i,16)</u> | <u>C(i,16)</u> | <u>C(i,16)</u> | 2 |
| Channelization | | <u>i=1,2</u> | <u>i=15</u> | <u>i=19</u> | <u>i=18</u> | |
| Codes* | | | | | | |
| <u>OCNS</u> | <u>C(k,Q)</u> | <u>C(3,16)</u> | <u>C(6,16)</u> | - | | 2 |
| Channelization | | | | | | |
| Code* | | | | | | |
| Information Data | kbps | 12.2 | 64 | 144 | 384 | 2048 |
| Rate | | | | | | |

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

Table 8.3: Performance requirements in AWGN channel (3.84 Mcps TDD Option).

| Test Number | $\frac{\hat{I}_{or}}{I_{oc}}$ [dB] | BLER |
|-------------|------------------------------------|------------------|
| 1 | <u>1.1</u> 0.1 | 10 ⁻² |
| 2 | <u>3.5</u> 2.3 | 10 ⁻¹ |
| | <u>3.8</u> 2.6 | 10 ⁻² |
| 3 | <u>3.42.2</u> | 10 ⁻¹ |
| | <u>3.6</u> 2.4 | 10 ⁻² |
| 4 | <u>2.7</u> 1.6 | 10 ⁻¹ |
| | <u>3.0</u> 1.8 | 10 ⁻² |
| 5 | 3.5 | 10 ⁻¹ |
| | 3.6 | 10 ⁻² |

8.2.1.1.2 1.28 Mcps TDD Option

For the parameters specified in Table 8.2A the BLER should not exceed the piece-wise linear BLER curve specified in Table 8.3A.

| Parameters | Unit | Test 1 | Test 2 | Test 3 | Test 4 |
|-----------------------------|-------------|--------|--------|--------|--------|
| Number of DPCH _o | | 8 | 2 | 2 | 0 |
| $DPCH_o _ E_c$ | dB | -10 | -10 | -10 | 0 |
| I _{or} | | | | | |
| l _{oc} | DBm/1.28MHz | | -6 | 60 | |
| Information Data Rate | Kbps | 12.2 | 64 | 144 | 384 |

Table 8.2A: DCH parameters in static propagation conditions (1.28 Mcps TDD Option)

| Table 8.3A: Performance re | quirements in AWGN channel | (1.28 Mcps TDD Option) |
|----------------------------|----------------------------|------------------------|

| Test Number | $rac{\hat{I}_{or}}{I_{oc}}$ [dB] | BLER |
|-------------|-----------------------------------|------------------|
| 1 | 3.1 | 10 ⁻² |
| 2 | 2.1 | 10 ⁻¹ |
| | 2.4 | 10 ⁻² |
| 3 | 2.5 | 10 ⁻¹ |
| | 2.8 | 10 ⁻² |
| 4 | 2.8 | 10 ⁻¹ |

8.3 Demodulation of DCH in multipath fading conditions

8.3.1 Multipath fading Case 1

The performance requirement of DCH is determined by the maximum Block Error Ratio (BLER). The BLER is specified for each individual data rate of the DCH. DCH is mapped into the Dedicated Physical Channel (DPCH).

8.3.1.1 Minimum requirement

8.3.1.1.1 3.84 Mcps TDD Option

For the parameters specified in Table 8.4 the BLER should not exceed the piece-wise linear BLER curve specified in Table 8.5. These requirement are applicable for TFCS size 16.

Table 8.4: DCH parameters in multipath Case 1 channel (3.84 Mcps TDD Option)

| Parameters | Unit | Test 1 | Test 2 | Test 3 | Test 4 | Test 5 |
|----------------------------------|---------------|--------------------------------|------------------------|------------------------|------------------------|----------|
| $\Sigma DPCH _ E_c$ | DB | -6 | -3 | 0 | 0 | 0 |
| I _{or} | | | | | | |
| l _{oc} | dBm/3.84 MHz | | | -60 | | |
| Cell Parameter* | | | <u>0</u> | <u>,1</u> | | <u>-</u> |
| DPCH Channelization Codes* | <u>C(k,Q)</u> | <u>C(i,16)</u> <u>i=1,2</u> | <u>C(i,16)</u> i=15 | <u>C(i,16)</u> i=19 | <u>C(i,16)</u> i=18 | Ξ |
| OCNS Channelization Code* | <u>C(k,Q)</u> | <u>C(3,16)</u> | <u>C(6,16)</u> | _ | = | = |
| Information Data Rate | kbps | 12.2 | 64 | 144 | 384 | 2048 |

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

| Test Number | $\frac{\hat{I}_{or}}{I_{oc}} \text{[dB]}$ | BLER |
|-------------|-------------------------------------------|------------------|
| 1 | <u>13.9</u> 13.5 | 10 ⁻² |
| 2 | <u>13.7</u> 13.3 | 10 ⁻¹ |
| | <u>19.8</u> 19.6 | 10 ⁻² |
| 3 | <u>14.1</u> 13.3 | 10 ⁻¹ |
| | <u>20.6</u> 19.7 | 10 ⁻² |
| 4 | <u>13.8</u> 13.5 | 10 ⁻¹ |
| | <u>20.0</u> 20.2 | 10 ⁻² |
| 5 | 13.2 | 10 ⁻¹ |
| | 17.8 | 10 ⁻² |

Table 8.5: Performance requirements in multipath Case 1 channel (3.84 Mcps TDD
Option).

8.3.1.1.2 1.28 Mcps TDD Option

For the parameters specified in Table 8.4A the BLER should not exceed the piece-wise linear BLER curve specified in Table 8.5A.

| Table 8.4A: DCH | parameters in multi | path Case 1 channel | (1.28 Mcps TDD Option) |
|-----------------|---------------------|---------------------|------------------------|
|-----------------|---------------------|---------------------|------------------------|

| Parameters | Unit | Test 1 | Test 2 | Test 3 | Test 4 |
|--------------------------------|-------------|--------|--------|--------|--------|
| Number of DPCH _o | | 8 | 2 | 2 | 0 |
| $\frac{DPCH_o _ E_c}{I_{or}}$ | DB | -10 | -10 | -10 | 0 |
| l _{oc} | dBm/1.28MHz | | -6 | 60 | |
| Information Data Rate | Kbps | 12.2 | 64 | 144 | 384 |

Table 8.5A: Performance requirements in multipath Case 1 channel (1.28 Mcps TDD Option)

| Test Number | $rac{\hat{I}_{or}}{I_{oc}}$ [dB] | BLER |
|-------------|-----------------------------------|------------------|
| 1 | 22.2 | 10 ⁻² |
| 2 | 15.0 | 10 ⁻¹ |
| | 22.0 | 10 ⁻² |
| 3 | 16.0 | 10 ⁻¹ |
| | 23.0 | 10 ⁻² |
| 4 | 16.0 | 10 ⁻¹ |
| | 23.0 | 10 ⁻² |

8.3.2 Multipath fading Case 2

The performance requirement of DCH is determined by the maximum Block Error Ratio (BLER). The BLER is specified for each individual data rate of the DCH. DCH is mapped into the Dedicated Physical Channel (DPCH).

8.3.2.1 Minimum requirement

8.3.2.1.1 3.84 Mcps TDD Option

For the parameters specified in Table 8.6 the BLER should not exceed the piece-wise linear BLER curve specified in Table 8.7. These requirements are applicable for TFCS size 16.

Table 8.6: DCH parameters in multipath Case 2 channel (3.84 Mcps TDD Option)

| Parameters | Unit | Test 1 | Test 2 | Test 3 | Test 4 | Test 5 |
|---------------------|---------------|----------------|----------------|----------------|----------------|----------|
| $\Sigma DPCH _E_c$ | DB | -3 | 0 | 0 | 0 | 0 |
| I _{or} | | | | | | |
| l _{oc} | dBm/3.84 MHz | | | -60 | | |
| Cell Parameter* | | | <u>0</u> | <u>,1</u> | | _ |
| DPCH | <u>C(k,Q)</u> | <u>C(i,16)</u> | <u>C(i,16)</u> | <u>C(i,16)</u> | <u>C(i,16)</u> | _ |
| Channelization | | <u>i=1,2</u> | <u>i=15</u> | <u>i=19</u> | <u>i=18</u> | |
| Codes* | | | | | | |
| <u>OCNS</u> | <u>C(k,Q)</u> | <u>C(3,16)</u> | <u>-</u> | - | <u>-</u> | <u>-</u> |
| Channelization | | | | | | |
| Code* | | | | | | |
| Information Data | kbps | 12.2 | 64 | 144 | 384 | 2048 |
| Rate | | | | | | |

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

Table 8.7: Performance requirements in multipath Case 2 channel (3.84 Mcps TDD Option).

| Test Number | $rac{\hat{I}_{or}}{I_{oc}}$ [dB] | BLER |
|-------------|-----------------------------------|------------------|
| 1 | <u>5.8</u> 5.5 | 10 ⁻² |
| 2 | <u>5.7</u> 5.8 | 10 ⁻¹ |
| | <u>9.2</u> 9.7 | 10 ⁻² |
| 3 | <u>9.3</u> 9.5 | 10 ⁻¹ |
| | <u>12.7</u> 13.2 | 10 ⁻² |
| 4 | <u>8.8</u> 8.5 | 10 ⁻¹ |
| | <u>12.0</u> 12.6 | 10 ⁻² |
| 5 | 10.3 | 10 ⁻¹ |
| | 12.7 | 10 ⁻² |

8.3.2.1.2 1.28 Mcps TDD Option

For the parameters specified in Table 8.6A the BLER should not exceed the piece-wise linear BLER curve specified in Table 8.7A.

| Table 8.6A: DCH parameters | in multipath Case 2 channel | (1.28 Mcps TDD Option) |
|----------------------------|-----------------------------|------------------------|
|----------------------------|-----------------------------|------------------------|

| Parameters | Unit | Test 1 | Test 2 | Test 3 | Test 4 |
|-----------------------------|-------------|--------|--------|--------|--------|
| Number of DPCH _o | | 8 | 2 | 2 | 0 |
| $\underline{DPCH_o _ E_c}$ | dB | -10 | -10 | -10 | 0 |
| I _{or} | | | | | |
| l _{oc} | dBm/1.28MHz | | -6 | 60 | |
| Information Data Rate | Kbps | 12.2 | 64 | 144 | 384 |

| Test Number | $rac{\hat{I}_{or}}{I_{oc}}$ [dB] | BLER |
|-------------|-----------------------------------|------------------|
| 1 | 13.2 | 10 ⁻² |
| 2 | 9.5 | 10 ⁻¹ |
| | 13.7 | 10 ⁻² |
| 3 | 10.0 | 10 ⁻¹ |
| | 14.0 | 10 ⁻² |
| 4 | 10.0 | 10 ⁻¹ |
| | 14.0 | 10 ⁻² |

Table 8.7A: Performance requirements in multipath Case 2 channel (1.28 Mcps TDD Option)

8.3.3 Multipath fading Case 3

The performance requirement of DCH is determined by the maximum Block Error Ratio (BLER). The BLER is specified for each individual data rate of the DCH. DCH is mapped into the Dedicated Physical Channel (DPCH).

8.3.3.1 Minimum requirement

8.3.3.1.1 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 8.9. These requirements are applicable for TFCS size 16.

 Table 8.8: DCH parameters in multipath Case 3 channel (3.84 Mcps TDD Option)

| Parameters | Unit | Test 1 | Test 2 | Test 3 | Test 4 | Test 5 |
|-------------------------------------------------------|---------------|--------------------------------|------------------------|------------------------|------------------------|----------|
| $\Sigma DPCH _ E_c$ | dB | -3 | 0 | 0 | 0 | 0 |
| I _{or} | | | | | | |
| l _{oc} | dBm/3.84 MHz | | | -60 | | |
| Cell Parameter* | | | <u>0</u> | <u>,1</u> | | <u>-</u> |
| <u>DPCH</u> <u>Channelization</u> <u>Codes*</u> | <u>C(k,Q)</u> | <u>C(i,16)</u> <u>i=1,2</u> | <u>C(i,16)</u> i=15 | <u>C(i,16)</u> i=19 | <u>C(i,16)</u> i=18 | = |
| <u>OCNS</u> <u>Channelization</u> <u>Code*</u> | <u>C(k,Q)</u> | <u>C(3,16)</u> | Ξ | - | - | - |
| Information Data Rate | kbps | 12.2 | 64 | 144 | 384 | 2048 |

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

| Test Number | $rac{\hat{I}_{or}}{I_{oc}}$ [dB] | BLER |
|-------------|-----------------------------------|---------------------------------------------------------------------------------------------------------------|
| 1 | <u>4.8</u> 4.7 | 10 ⁻² |
| 2 | <u>5.85.2</u> | $ \begin{array}{r} 10^{-1} \\ 10^{-2} \\ 10^{-3} \\ 10^{-1} \\ 10^{-2} \\ 10^{-3} \\ 10^{-3} \\ \end{array} $ |
| | <u>8.5</u> 8.4 | 10 ⁻² |
| | <u>10.7</u> 12.1 | 10 ⁻³ |
| 3 | <u>10.3</u> 11.7 | 10 ⁻¹ |
| | <u>13.3</u> 15.2 | 10 ⁻² |
| | <u>16.0</u> 17.8 | 10 ⁻³ |
| 4 | <u>8.9</u> 8.2 | $ \begin{array}{r} 10^{-1} \\ 10^{-2} \\ 10^{-3} \end{array} $ |
| | <u>11.5</u> 11.3 | 10 ⁻² |
| | <u>13.6</u> 13.0 | 10 ⁻³ |
| 5 | 9.4 | 10 ⁻¹ |
| | 11.5 | 10 ⁻² 10 ⁻³ |
| | 13.6 | 10 ⁻³ |

Table 8.9: Performance requirements in multipath Case 3 channel (3.84 Mcps TDD Option).

8.3.3.1.2 1.28 Mcps TDD Option

For the parameters specified in Table 8.8A the BLER should not exceed the piece-wise linear BLER curve specified in Table 8.9A.

| Parameters | Unit | Test 1 | Test 2 | Test 3 | Test 4 |
|-----------------------------|-------------|--------|--------|--------|--------|
| Number of DPCH _o | | 8 | 2 | 2 | 0 |
| $\underline{DPCH_o _ E_c}$ | dB | -10 | -10 | -10 | 0 |
| I _{or} | | | | | |
| l _{oc} | dBm/1.28MHz | | -(| 60 | |
| Information Data Rate | Kbps | 12.2 | 64 | 144 | 384 |

Table 8.9A: Performance requirements in multipath Case 3 channel (1.28 Mcps TDD
Option)

| Test Number | $rac{\hat{I}_{or}}{I_{oc}}$ [dB] | BLER |
|-------------|-----------------------------------|------------------|
| 1 | 10.8 | 10 ⁻² |
| 2 | 8.3 | 10 ⁻¹ |
| | 11.1 | 10 ⁻² |
| | 13.8 | 10 ⁻³ |
| 3 | 8.7 | 10 ⁻¹ |
| | 10.6 | 10 ⁻² |
| | 11.8 | 10 ⁻³ |
| 4 | 8.8 | 10 ⁻¹ |
| | 10.3 | 10 ⁻² |
| | 11.5 | 10 ⁻³ |

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| CR-Form-v4 | | | | | | | | | | |
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8.6 Uplink Power Control

Power control in the uplink is the ability of the UE to converge to the required link quality set by the network while using minimum uplink power.

8.6.1 Test Conditions

During period T1, the PCCPCH and a second Beacon Channel are transmitted in the DL in designated slots within each frame and at the same power level.

<u>The UE transmits, using the channel of TS25.105, Annex A.2.1 UL reference measurement channel (12.2 kbps) in one UL slot.</u> For different parts of the test, different UL slots will be designated.

The values of table 8.14, period T1 shall be selected. Then, with the received PCCPCH and Beacon power set at -60 dBm, the value of DPCH constant value shall be adjusted so that the mean UE output power is 5 dBm. These conditions are held steady during period T1.

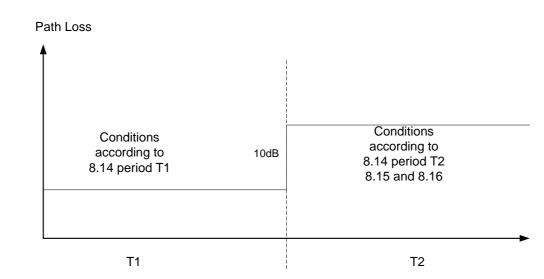
Periods T1 and T2 are each 5 seconds long.

Table 8.14

UL Power Control Test Conditions

| | | Period T1 | Period T2 | | | |
|-----------------------------------------------|---------------------------------------|------------|--------------------------------------|--|--|--|
| I _{BTS} all slots | <u>dBm</u> | -1 | <u>60</u> | | | |
| PCCPCH Power -Broadcast | <u>dBm</u> | 1 | 18 | | | |
| PCCPCH power - Received | <u>dBm</u> | <u>-60</u> | <u>-70</u> | | | |
| Mean UE transmit power | <u>dBm</u> | <u>5</u> | According to tables 8.15 and 8.16 | | | |
| <u>SIR_{TARGET}</u> | <u>dB</u> | | <u>6</u> | | | |
| I _{oc} in PCCPCH and Beacon Slots | <u>dBm</u> | | <u>60</u> | | | |
| IE (information element) Alpha | <u>As defined in</u> <u>25.331</u> | 1 | <u>.0</u> | | | |
| PCCPCH slot position | <u>Integer 0 –14</u> | | <u>0</u> | | | |
| Beacon slot position | Integer 0-14 | <u>8</u> | | | | |

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8.6.2 Performance

At the end of period T1, the PCCPCH and Beacon Received power shall be simultaneously decreased by 10 dB. These conditions are summarized in table 8.14, period T2.

For the first frame including the change in received power the UE output power shall satisfy the values in table 8.15.

For the 20th frame after the change in received power the UE output power shall satisfy the values in table 8.16.

Table 8.15

Required UE Output Power, Frame Containing Power Level Change

| Parameter | <u>Units</u> | Value | | |
|-------------------------------|--------------|----------------|---------------|--|
| UL transmission slot position | | <u>1,9</u> | <u>7,14</u> | |
| <u>UE output power</u> | <u>dBm</u> | <u>15_±4.0</u> | <u>5_±0.5</u> | |

| · • | 0 | h | ~ | 6 |
|-----|---|----|---|------|
| | а | ., | 0 | |

Required UE Output Power, 20 Frames after Power Level Change

| Parameter | <u>Units</u> | Value | | |
|-------------------------------|--------------|----------------|----------------|--|
| UL transmission slot position | | <u>1,9</u> | <u>7,14</u> | |
| UE output power | <u>dBm</u> | <u>15 ±4.0</u> | <u>15 ±4.0</u> | |

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| | | | | | | | | | | | CR-Form-v4 |
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8.6 Uplink Power Control for 3.84 Mcps TDD Option

Power control in the uplink is the ability of the UE to converge to the required link quality set by the network while using minimum uplink power.

8.6.1 Test Conditions

During period T1, the PCCPCH and a second Beacon Channel are transmitted in the DL in designated slots within each frame and at the same power level.

The UE transmits, using the channel of TS25.105, Annex A.2.1 UL reference measurement channel (12.2 kbps) in one UL slot. For different parts of the test, different UL slots will be designated.

The values of table 8.14, period T1 shall be selected. Then, with the received PCCPCH and Beacon power set at -60 dBm, the value of DPCH constant value shall be adjusted so that the mean UE output power is 5 dBm. These conditions are held steady during period T1.

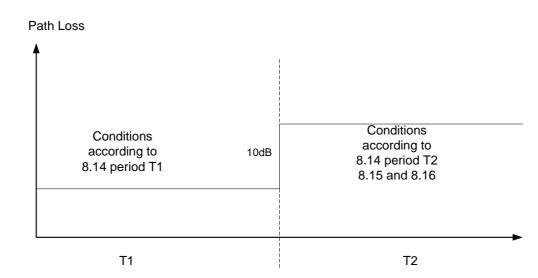
Periods T1 and T2 are each 5 seconds long.

Table 8.14

UL Power Control Test Conditions

| | | Period T1 | Period T2 |
|------------------------------------------------------------|---------------------------------------|------------|--------------------------------------|
| I _{BTS} all slots | <u>dBm</u> | - | <u>60</u> |
| PCCPCH Power -Broadcast | <u>dBm</u> | 1 | 18 |
| PCCPCH power - Received | <u>dBm</u> | <u>-60</u> | <u>-70</u> |
| Mean UE transmit power | <u>dBm</u> | <u>5</u> | According to tables 8.15 and 8.16 |
| <u>SIR_{TARGET}</u> | <u>dB</u> | | <u>6</u> |
| <u>I_{oc} in PCCPCH and Beacon</u> <u>Slots</u> | <u>dBm</u> | - | <u>60</u> |
| IE (information element) Alpha | <u>As defined in</u> <u>25.331</u> | 1 | <u>.0</u> |
| PCCPCH slot position | <u>Integer 0 –14</u> | | <u>0</u> |
| Beacon slot position | Integer 0-14 | | <u>8</u> |

Release 4



8.6.2 Performance

At the end of period T1, the PCCPCH and Beacon Received power shall be simultaneously decreased by 10 dB. These conditions are summarized in table 8.14, period T2.

For the first frame including the change in received power the UE output power shall satisfy the values in table 8.15.

For the 20th frame after the change in received power the UE output power shall satisfy the values in table 8.16.

Table 8.15

Required UE Output Power, Frame Containing Power Level Change

| Parameter | <u>Units</u> | Value | | |
|-------------------------------|--------------|----------------|---------------|--|
| UL transmission slot position | | <u>1,9</u> | <u>7,14</u> | |
| <u>UE output power</u> | <u>dBm</u> | <u>15_±4.0</u> | <u>5_±0.5</u> | |

| | | | _ | | | |
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| 14 | 0. | <u> </u> | 0 | • | - | <u> </u> |

Required UE Output Power, 20 Frames after Power Level Change

| Parameter | <u>Units</u> | Value | | |
|-------------------------------|--------------|----------------|----------------|--|
| UL transmission slot position | | <u>1,9</u> | <u>7,14</u> | |
| UE output power | <u>dBm</u> | <u>15 ±4.0</u> | <u>15 ±4.0</u> | |

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Gothenburg, Sweden 21st - 25th May 2001

| CR-Form-v4 CHANGE REQUEST | | | | | | | | |
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| Reason for change: # Clarification and correction of the specification Summary of change: # Informative note should be normative text. Correction of emission mask measurement filter bandwidth. | | | | | | | | |
| Consequences if not approved: | # Requir | ements canno | ot be met if c | arification is | not included. | | | |
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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.

Release 1999

6.6.2.1 Spectrum emission mask

The spectrum emission mask of the UE applies to frequencies, which are between 2.5 and 12.5MHz from a carrier frequency. The out of channel emission is specified relative to the UE output power in measured in a 3.84 MHz bandwidth.

6.6.2.1.1 Minimum Requirement

The power of any UE emission shall not exceed the levels specified in table 6.5.

Table 6.5 : Spectrum Emission Mask Requirement

| Frequency offset from carrier ∆f | Minimum requirement | Measurement bandwidth | |
|--------------------------------------------------------------------------------------------------------|-------------------------|-----------------------|--|
| 2.5 - 3.5 MHz | -35 -15*(∆f – 2.5) dBc | 30 kHz * | |
| 3.5 - 7.5 MHz | -35- 1*(∆f-3.5) dBc | 1 MHz * <u>*</u> | |
| 7.5 - 8.5 MHz | -39 - 10*(∆f – 7.5) dBc | 1 MHz * <u>*</u> | |
| 8.5 - 12.5 MHz | -49 dBc | 1 MHz * <u>*</u> | |
| * The first and last measurement position with a 30 kHz filter is 2.515 MHz and 3.485 MHz. | | | |
| ** The first and last measurement position with a 1 MHz filter is 4 MHz and 12 MHz. As a general rule, | | | |
| the resolution bandwidth of the measuring equipment should be equal to the measurement bandwidth. | | | |
| To improve measurement accuracy, sensitivity and efficiency, the resolution bandwidth can be | | | |
| different from the measurement bandwidth. When the resolution bandwidth is smaller than the | | | |
| measurement bandwidth, the result should be integrated over the measurement bandwidth. | | | |
| The lower limit shall be –50dBm/3.84 MHz or the minimum requirement presented in this table which ever | | | |
| <u>is the higher.</u> | | | |

Note

- 1. The first and last measurement position with a 30 kHz filter is 2.515 MHz and 3.485 MHz
- 2. The first and last measurement position with a 1 MHz filter is 4 MHz and 12 MHz
- 3. The lower limit shall be 50dBm/3.84 MHz or which ever is the higher

----Next changed section----

6.6.3 Spurious emissions

Spurious emissions are emissions which are caused by unwanted transmitter effects such as harmonics emission, parasitic emission, intermodulation products and frequency conversion products, but exclude out of band emissions. The frequency boundary and the detailed transitions of the limits between the requirement for out band emissions and spectrum emissions are based on ITU-R Recommendations SM.329-8.

6.6.3.1 Minimum Requirement

These requirements are only applicable for frequencies which are greater than 12.5 MHz away from the UE center carrier frequency.

| Table 6.7A : General | Spurious e | emissions | requirements |
|----------------------|------------|-----------|--------------|
| | | | |

| Frequency Bandwidth | Resolution Measurement Bandwidth | Minimum requirement |
|-----------------------|-------------------------------------|---------------------|
| 9 kHz ≤ f < 150 kHz | 1 kHz | -36 dBm |
| 150 kHz ≤ f < 30 MHz | 10 kHz | -36 dBm |
| 30 MHz ≤ f < 1000 MHz | 100 kHz | -36 dBm |
| 1 GHz ≤ f < 12.75 GHz | 1 MHz | -30 dBm |

Table 6.7B : Additional Spurious emissions requirements

| Frequency Bandwidth | Resolution <u>Measurement</u> Bandwidth | Minimum requirement | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|---------------------|--|
| 925 MHz ≤ f ≤ 935 MHz | 100 KHz | -67 dBm* | |
| 935 MHz < f ≤ 960 MHz | 100 KHz | -79 dBm* | |
| 1805 MHz ≤ f ≤ 1880 MHz | 100 KHz | -71 dBm* | |
| * The measurements are made on frequencies which are integer multiples of 200 kHz. As exceptions, up to five measurements with a level up to the applicable requirements defined in Table 6.7A are permitted for each UARFCN used in the measurement. | | | |

NOTE: The measurements are made on frequencies which are integer multiples of 200 kHz. As exceptions, up to five measurements with a level up to the applicable requirements defined in Table 6.7A are permitted for each UARFCN used in the measurement.

----Next changed section----

7.6 Blocking characteristics

The blocking characteristics is a measure of the receiver ability to receive a wanted signal at is assigned channel frequency in the presence of an unwanted interferer on frequencies other than those of the spurious response or the adjacent channels without this unwanted input signal causing a degradation of the performance of the receiver beyond a specified limit. The blocking performance shall apply at all frequencies except those at which a spurious response occur.

7.6.1 Minimum Requirement

The BER shall not exceed 0.001 for the parameters specified in table 7.6 and table 7.7. For table 7.7 up to 24 exceptions are allowed for spurious response frequencies in each assigned frequency channel when measured using a 1MHz step size.

| Parameter | Offset | Offset | Unit |
|--------------------------------------|----------------------------|----------------------------|--------------|
| Wanted Signal Level | <refsens> + 3 dB</refsens> | <refsens> + 3 dB</refsens> | dBm/3.84 MHz |
| Unwanted Signal Level (modulated) | -56 | -44 | dBm/3.84 MHz |
| Fuw (offset) | +10 or –10 | +15 or –15 | MHz |

Table 7.6: In-band blocking

| Parameter | Band 1 | Band 2 | Band 3 | Unit |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------|
| Wanted Signal Level | <refsens> +</refsens> | <refsens> +</refsens> | <refsens> +</refsens> | dBm/3.84 |
| Wanted Signal Level | 3 dB | 3 dB | 3 dB | MHz |
| Unwanted Signal Level (CW) | -44 | -30 | -15 | dBm |
| F _{uw} For operation in frequency bands as definded in subclause 5.2(a) | 1840 <f <1885<br="">1935 <f <1995<br="">2040 <f <2085<="" td=""><td>1815 <f <1840<br="">2085 <f <2110<="" td=""><td>1< f <1815 2110< f <12750</td><td>MHz</td></f></f></td></f></f></f> | 1815 <f <1840<br="">2085 <f <2110<="" td=""><td>1< f <1815 2110< f <12750</td><td>MHz</td></f></f> | 1< f <1815 2110< f <12750 | MHz |
| F _{uw} For operation in frequency bands as definded in subclause 5.2(b) | 1790 < f < 1835 2005 < f < 2050 | 1765 < f < 1790 2050 < f < 2075 | 1 < f < 1765 2075 < f < 12750 | MHz |
| F _{uw} For operation in frequency bands as definded in subclause 5.2(c) | 1850 < f < 1895 1945 < f < 1990 | 1825 < f < 1850 1990 < f < 2015 | 1 < f < 1825 2015 < f < 12750 | MHz |
| <u>1.For operation referenced in 5.2(a), from 1885 <f< 1900="" 1920="" 1935="" 1995="" 2010="" 2025<f<="" 2040="" 7.5.1="" 7.6="" <f<="" adjacent="" and="" applied.<="" appropriate="" be="" blocking="" channel="" in="" in-band="" mhz="" mhz,="" or="" section="" selectivity="" shall="" table="" the="" u=""></f<></u> | | | | |
| 2.For operation referenced in 5.2(b), from 1835 < f < 1850 MHz and 1990 < f < 2005 MHz, the appropriate in- | | | | |
| oand blocking in table 7.6 or adjacent cl | nannel selectivity in | section 7.5.1 shall b | <u>be applied.</u> | |
| 3.For operation referenced in 5.2(c), fro | <u>m 1895 < f < 1910 N</u> | <u>/Hz and 1930< f < 1</u> | 1945 MHz, the appro | opriate in- |
| band blocking in table 7.6 or adjacent cl | hannel selectivity in | section 7.5.1 shall h | he applied | |

Table 7.7: Out of band blocking

NOTES: 1. For operation referenced in 5.2(a), from 1885 <f< 1900 MHz, 1920 <f< 1935 MHz, 1995 <f< 2010 MHz and 2025 <f< 2040 MHz, the appropriate in band blocking or adjacent channel selectivity in section 7.5.1 shall be applied.

2.For operation referenced in 5.2(b), from 1835 < f < 1850 MHz and 1990 < f < 2005 MHz, the appropriate in band blocking or adjacent channel selectivity in section 7.5.1 shall be applied.

For operation referenced in 5.2(c), from 1895 < f < 1910 MHz and 1930 < f < 1945 MHz, the appropriate in band blocking or adjacent channel selectivity in section 7.5.1 shall be applied.

3GPP TSG RAN WG4 Meeting #17

Gothenburg, Sweden 21st - 25th May 2001

| CHANGE REQUEST | | | |
|----------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| x | 25.102 CR 59 * ev - * Cu | rrent version: 4.0.0 [#] | |
| For <u>HELP</u> on u | sing this form, see bottom of this page or look at the po | p-up text over the X symbols. | |
| Proposed change | affects: ೫ (U)SIM ME/UE X Radio Access | s Network Core Network | |
| Title: % | Corrections and note status changes from informative | e to normative | |
| Source: अ | RAN WG4 | | |
| Work item code: अ | TEI | Date: | |
| Category: ₩ | | lease: # REL-4 lse <u>one</u> 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) | |
| Reason for change | e: 第 Clarification and correction of the specification | | |
| Summary of chang | Informative note should be normative text. Correct measurement filter bandwidth. | ction of emission mask | |
| Consequences if not approved: | Requirements cannot be met if clarification is no | t included. | |
| Clauses affected: | ¥ 6.6.2.1, 6.6.3.1, 7.6.1 | | |
| Other specs affected: | XOther core specificationsXTest specificationsTS 34.122O&M SpecificationsTS 34.122 | | |
| Other comments: | X | | |

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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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

Release 4

6.6.2.1 Spectrum emission mask

6.6.2.1.1 3.84 Mcps TDD Option

The spectrum emission mask of the UE applies to frequencies, which are between 2.5 and 12.5MHz from a carrier frequency. The out of channel emission is specified relative to the UE output power in measured in a 3.84 MHz bandwidth.

6.6.2.1.1.1 Minimum Requirement

The power of any UE emission shall not exceed the levels specified in table 6.5.

Table 6.5: Spectrum Emission Mask Requirement (3.84 Mcps TDD Option)

| Frequency offset from carrier ∆f | Minimum requirement | Measurement bandwidth | |
|------------------------------------------------------------------------------------------------------------|-------------------------|-----------------------|--|
| 2.5 - 3.5 MHz | -35 -15*(∆f – 2.5) dBc | 30 kHz * | |
| 3.5 - 7.5 MHz | -35- 1*(∆f-3.5) dBc | 1 MHz * <u>*</u> | |
| 7.5 - 8.5 MHz | -39 - 10*(∆f – 7.5) dBc | 1 MHz * <u>*</u> | |
| 8.5 - 12.5 MHz | -49 dBc | 1 MHz * <u>*</u> | |
| * The first and last measurement position with a 30 kHz filter is 2.515 MHz and 3.485 MHz. | | | |
| ** The first and last measurement position with a 1 MHz filter is 4 MHz and 12 MHz. As a general rule, the | | | |
| resolution bandwidth of the measuring equipment should be equal to the measurement bandwidth. To | | | |
| improve measurement accuracy, sensitivity and efficiency, the resolution bandwidth can be different from | | | |
| the measurement bandwidth. When the resolution bandwidth is smaller than the measurement | | | |
| bandwidth, the result should be integrated over the measurement bandwidth. | | | |
| The lower limit shall be –50dBm/3.84 MHz or the minimum requirement presented in this table which ever | | | |
| is the higher. | | | |

NOTE:

1) The first and last measurement position with a 30 kHz filter is 2.515 MHz and 3.485 MHz

2) The first and last measurement position with a 1 MHz filter is 4 MHz and 12 MHz

3) The lower limit shall be -50dBm/3.84 MHz or which ever is the higher

6.6.2.1.2 1.28 Mcps TDD Option

The spectrum emission mask of the UE applies to frequencies, which are between 0.8 and 4.0MHz from a carrier frequency. The out of channel emission is specified relative to the UE output power in measured in a 1.28 MHz bandwidth.

6.6.2.1.2.1 Minimum Requirement

The power of any UE emission shall not exceed the levels specified in table 6.5A

Table 6.5A: Spectrum Emission Mask Requirement (1.28 Mcps TDD Option)

| Frequency offset from carrier Δf | Minimum requirement | Measurement bandwidth | |
|----------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|--|
| 0.8 MHz | -35 dBc | 30 kHz <u>*</u> | |
| 0.8-1.8 MHz | -35 – 14*(Δf-0.8) dBc | 30 kHz <u>*</u> | |
| 1.8-2.4 MHz | -49 – 25*(Δf-1.8)dBc | 30 kHz <u>*</u> | |
| 2.4 – 4.0MHz | -49 dBc | 1MHz <u>**</u> | |
| * The first and last measurement position with a 30 kHz filter is 0.815 MHz and 2.385 MHz. | | | |
| ** The first and last measurement position with a 1 MHz filter is 2.9MHz and 3.5MHz .As a general rule, | | | |
| the resolution bandwidth of the measuring equipment should be equal to the measurement bandwidth. To | | | |
| improve measurement accuracy, sensitivity and efficiency, the resolution bandwidth can be different from | | | |
| the measurement bandwidth. When the resolution bandwidth is smaller than the measurement | | | |
| bandwidth, the result should be integrated over the measurement bandwidth. | | | |
| The lower limit shall be -55dBm/1.28 MHz or the minimum requirement presented in this table which ever | | | |
| is the higher. | | | |

NOTE:

1) The first and last measurement position with a 30 kHz filter is 0.815 MHz and 2.385 MHz

- 2) The first and last measurement position with a 1 MHz filter is 2.9MHz and 3.5MHz
- 3) The lower limit shall be 55dBm/1.28 MHz or which ever is the higher.

Release 4

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----Next changed section----

6.6.3 Spurious emissions

Spurious emissions are emissions which are caused by unwanted transmitter effects such as harmonics emission, parasitic emission, intermodulation products and frequency conversion products, but exclude out of band emissions. The frequency boundary and the detailed transitions of the limits between the requirement for out band emissions and spectrum emissions are based on ITU-R Recommendations SM.329-8.

6.6.3.1 Minimum Requirement

6.6.3.1.1 3.84 Mcps TDD Option

These requirements are only applicable for frequencies which are greater than 12.5 MHz away from the UE center carrier frequency.

| Frequency Bandwidth | Resolution Measurement Bandwidth | Minimum requirement |
|-----------------------|-------------------------------------|---------------------|
| 9 kHz ≤ f < 150 kHz | 1 kHz | -36 dBm |
| 150 kHz ≤ f < 30 MHz | 10 kHz | -36 dBm |
| 30 MHz ≤ f < 1000 MHz | 100 kHz | -36 dBm |
| 1 GHz ≤ f < 12.75 GHz | 1 MHz | -30 dBm |

Table 6.7B : Additional Spurious emissions requirements (3.84 Mcps TDD Option)

Frequency Bandwidth Resolution Measurement Minimum requirement Bandwidth 100 KHz -67 dBm* 925 MHz \leq f \leq 935 MHz 935 MHz < f \leq 960 MHz 100 KHz -79 dBm* $1805 \text{ MHz} \leq f \leq 1880 \text{ MHz}$ 100 KHz -71 dBm* * The measurements are made on frequencies which are integer multiples of 200 kHz. As exceptions, up to five measurements with a level up to the applicable requirements defined in Table 6.7A are permitted for each UARFCN used in the measurement.

NOTE: The measurements are made on frequencies which are integer multiples of 200 kHz. As exceptions, up to five measurements with a level up to the applicable requirements defined in Table 6.7A are permitted for each UARFCN used in the measurement.

6.6.3.1.2 1.28 Mcps TDD Option

These requirements are only applicable for frequencies which are greater than 4 MHz away from the UE center carrier frequency.

| Frequency Bandwidth | Resolution <u>Measurement</u> Bandwidth | Minimum requirement |
|-----------------------|--------------------------------------------|---------------------|
| 9 kHz ≤ f < 150 kHz | 1 kHz | -36 dBm |
| 150 kHz ≤ f < 30 MHz | 10 kHz | -36 dBm |
| 30 MHz ≤ f < 1000 MHz | 100 kHz | -36 dBm |
| 1 GHz ≤ f < 12.75 GHz | 1 MHz | -30 dBm |

| Table 6.7D : Additional S | nurious emissions rec | wirements (1 28 Ma | ens TDD Ontion) |
|----------------------------|------------------------|---------------------|-----------------|
| Table 0.7 D . Adultional S | punious ennissions rec | un ements (1.20 mit | |

| Frequency Bandwidth | Resolution-Measurement Bandwidth | Minimum requirement | | | |
|---------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|--|--|--|
| 925 MHz ≤ f ≤ 935 MHz | 100 KHz | -67 dBm* | | | |
| 935 MHz < f ≤ 960 MHz | 100 KHz | -79 dBm* | | | |
| 1805 MHz ≤ f ≤ 1880 MHz | 100 KHz | -71 dBm* | | | |
| * The measurements are made on frequencies which are integer multiples of 200 kHz. As exceptions, | | | | | |
| up to five measurements with a level up to the | ne applicable requirements defined | <u>l in Table 6.7C are</u> | | | |
| permitted for each UARFCN used in the mea | asurement. | | | | |

NOTE: The measurements are made on frequencies which are integer multiples of 200 kHz. As exceptions, up to five measurements with a level up to the applicable requirements defined in Table 6.7C are permitted for each UARFCN used in the measurement.

----Next changed section----

7.6 Blocking characteristics

The blocking characteristics is a measure of the receiver ability to receive a wanted signal at is assigned channel frequency in the presence of an unwanted interferer on frequencies other than those of the spurious response or the adjacent channels without this unwanted input signal causing a degradation of the performance of the receiver beyond a specified limit. The blocking performance shall apply at all frequencies except those at which a spurious response occur.

7.6.1 Minimum Requirement

7.6.1.1 3.84 Mcps TDD Option

The BER shall not exceed 0.001 for the parameters specified in table 7.6 and table 7.7. For table 7.7 up to 24 exceptions are allowed for spurious response frequencies in each assigned frequency channel when measured using a 1MHz step size.

| Parameter | Offset | Offset | Unit |
|--------------------------------------|----------------------------|----------------------------|--------------|
| Wanted Signal Level | <refsens> + 3 dB</refsens> | <refsens> + 3 dB</refsens> | dBm/3.84 MHz |
| Unwanted Signal Level (modulated) | -56 | -44 | dBm/3.84 MHz |
| Fuw (offset) | +10 or –10 | +15 or –15 | MHz |

Table 7.6: In-band blocking (3.84 Mcps TDD Option)

| Table 7.7: Out of band blocking | (3.84 Mcps TDD Option) |
|---------------------------------|------------------------|
|---------------------------------|------------------------|

| Parameter | Band 1 | Band 2 | Band 3 | Unit | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-------------------------------------------|---------------|--|
| Wanted Signal Level | <refsens> + 3</refsens> | <refsens> +</refsens> | <refsens> +</refsens> | dBm/3.84 | |
| | dB | 3 dB | 3 dB | MHz | |
| Unwanted Signal Level (CW) | -44 | -30 | -15 | dBm | |
| F _{uw} For operation in frequency bands as definded in subclause 5.2(a) | 1840 <f <1885<br="">1935 <f <1995<br="">2040 <f <2085<="" td=""><td>1815 <f <1840<br="">2085 <f <2110<="" td=""><td>1< f <1815 2110< f <12750</td><td>MHz</td></f></f></td></f></f></f> | 1815 <f <1840<br="">2085 <f <2110<="" td=""><td>1< f <1815 2110< f <12750</td><td>MHz</td></f></f> | 1< f <1815 2110< f <12750 | MHz | |
| F _{uw} For operation in frequency bands as definded in subclause 5.2(b) | 1790 < f < 1835 2005 < f < 2050 | 1765 < f < 1790 2050 < f < 2075 | 1 < f < 1765 2075 < f < 12750 | MHz | |
| F _{uw} For operation in frequency bands as definded in subclause 5.2(c) | 1850 < f < 1895 1945 < f < 1990 | 1825 < f < 1850 1990 < f < 2015 | 1 < f < 1825 2015 < f < 12750 | MHz | |
| 1. For operation referenced in 5.2(a), | from 1885 <f< 1900<="" td=""><td>MHz, 1920 <f< 193<="" td=""><td><u>35 MHz, 1995 <f< 20<="" u=""></f<></u></td><td>010 MHz and</td></f<></td></f<> | MHz, 1920 <f< 193<="" td=""><td><u>35 MHz, 1995 <f< 20<="" u=""></f<></u></td><td>010 MHz and</td></f<> | <u>35 MHz, 1995 <f< 20<="" u=""></f<></u> | 010 MHz and | |
| 2025 <f< 2040="" 7.5.1="" 7.6="" adjacent="" applied.<="" appropriate="" be="" blocking="" channel="" in="" in-band="" mhz,="" or="" section="" selectivity="" shall="" table="" td="" the=""></f<> | | | | | |
| 2. For operation referenced in 5.2(b), from 1835 < f < 1850 MHz and 1990< f < 2005 MHz, the appropriate in- band blocking in table 7.6 or adjacent channel selectivity in section 7.5.1 shall be applied. | | | | | |
| 3. For operation referenced in 5.2(c), band blocking in table 7.6 or adjacent | | | | propriate in- | |

NOTES:

- For operation referenced in 5.2(a), from 1885 <f < 1900 MHz, 1920 <f < 1935 MHz, 1995 <f < 2010 MHz and 2025 <f < 2040 MHz, the appropriate in band blocking or adjacent channel selectivity in section 7.5.1 shall be applied.
- 2) For operation referenced in 5.2(b), from 1835 < f < 1850 MHz and 1990 < f < 2005 MHz, the appropriate inband blocking or adjacent channel selectivity in section 7.5.1 shall be applied.

3) For operation referenced in 5.2(c), from 1895 < f < 1910 MHz and 1930 < f < 1945 MHz, the appropriate inband blocking or adjacent channel selectivity in section 7.5.1 shall be applied.

7.6.1.2 1.28 Mcps TDD Option

The BER shall not exceed 0.001 for the parameters specified in table 7.6A and table 7.7A.

Table 7.6A: In-band blocking (1.28 Mcps TDD Option)

| Parameter | Offset | Offset | Unit |
|-----------------------------------|----------------------------|----------------------------|--------------|
| Wanted Signal Level | <refsens> + 3 dB</refsens> | <refsens> + 3 dB</refsens> | dBm/1.28 MHz |
| Unwanted Signal Level (modulated) | -61 | -49 | dBm/1.28 MHz |
| F _{uw} (offset) | +3.2 or -3.2 | +4.8 or -4.8 | MHz |

Table 7.7A: Out of band blocking (1.28 Mcps TDD Option)

| Parameter | Band 1 | Band 2 | Band 3 | Unit | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|----------------------------------|----------|--|
| Wanted Signal Laval | <refsens> + 3</refsens> | <refsens> + 3</refsens> | <refsens> + 3</refsens> | dBm/1.28 | |
| Wanted Signal Level | dB | dB | dB | MHz | |
| Unwanted Signal Level (CW) | -44 | -30 | -15 | dBm | |
| F _{uw} For operation in frequency bands as definded in subclause 5.2(a) | 1840 <f <1895.2<br="">1924.8 <f <2005.2<br="">2029.8 <f <2085<="" td=""><td>1815 <f <1840<br="">2085 <f <2110<="" td=""><td>1< f <1815 2110< f <12750</td><td>MHz</td></f></f></td></f></f></f> | 1815 <f <1840<br="">2085 <f <2110<="" td=""><td>1< f <1815 2110< f <12750</td><td>MHz</td></f></f> | 1< f <1815 2110< f <12750 | MHz | |
| F _{uw} For operation in frequency bands as definded in subclause 5.2(b) | 1790 < f < 1845.2 1994.8 < f < 2050 | 1765 < f < 1790 2050 < f < 2075 | 1 < f < 1765 2075 < f < 12750 | MHz | |
| F _{uw} For operation in frequency bands as definded in subclause 5.2(c) | 1850 < f < 1905.2 1934.8 < f < 1990 | 1825 < f < 1850 1990 < f < 2015 | 1 < f < 1825 2015 < f < 12750 | MHz | |
| 1. For operation referenced in 5.2(a), from 1895.2 <f< 1900="" 1920="" 1924.8="" 2005.2="" 2010<br="" <f<="" mhz,="">MHz and 2025<f< 2029.8="" 7.6a="" adjacent="" appropriate="" blocking="" channel="" in="" in-band="" mhz,="" or="" selectivity<br="" table="" the="">in section 7.5.1.2shall be applied.</f<></f<> | | | | | |
| 2. For operation referenced in 5.2(b), from 1845.2 < f < 1850 MHz and 1990< f < 1994.8 MHz, the appropriate in-band blocking in table 7.6A or adjacent channel selectivity in section 7.5.1.2 shall be applied. | | | | | |
| 3. For operation referenced in-band blocking in table 7.6 | | | | | |

NOTES:

- 1) For operation referenced in 5.2(a), from 1895.2 <f< 1900 MHz, 1920 <f< 1924.8 MHz, 2005.2 <f< 2010 MHz and 2025 <f< 2029.8 MHz , the appropriate in-band blocking or adjacent channel selectivity in section 7.5.1.2shall be applied.
- 2) For operation referenced in 5.2(b), from 1845.2 < f < 1850 MHz and 1990< f < 1994.8 MHz, the appropriate in band blocking or adjacent channel selectivity in section 7.5.1.2 shall be applied.

3) For operation referenced in 5.2(c), from 1905.2 < f < 1910 MHz and 1930 < f < 1934.8 MHz, the appropriate in band blocking or adjacent channel selectivity in section 7.5.1.2 shall be applied.

3GPP TSG RAN WG4 Meeting #17

R4-010476

Gothenburg, Sweden 21st - 25th May 2001

| | | | | | | | CR-Form-v |
|----------------------------------|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|--------------|-----------------------------------|---------------------------------------------------------------------------------------------------------------------|-----------|
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| æ | 25.10 | 2 CR <mark>64</mark> | ж rev | - * (| Current versi | ion: 3.6.0 | ж |
| For <u>HELP</u> on | using this i | form, see bottom | of this page or | look at the | pop-up text | over the # syn | nbols. |
| Proposed change | e affects: | ₩ (U)SIM | ME/UE X | Radio Acc | ess Network | Core Ne | twork |
| Title: | ₩ <mark>BCH pe</mark> | erformance requi | rement | | | | |
| Source: | ₩ <mark>RAN W</mark> | G4 | | | | | |
| Work item code: | ₩ <mark>TEI</mark> | | | | Date: ೫ | 2001-05-21 | |
| Category: | ₩ <u>F</u> | | | | Release: ೫ | <u>R99</u> | |
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| Consequences if not approved: | | hough there wou defined. | uld be a perform | nance requi | rement, no c | onformance te | st can |
| Clauses affected | : | 4.1.1 | | | | | |
| Other specs affected: | X | Other core spec Test specificatio O&M Specificati | ns | | | | |
| Other comments | : ¥ | | | | | | |

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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 <u>ftp://www.3gpp.org/specs/</u> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the September 2000 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.

| Parameters | Unit | Test 1 | Test 2 | Test 3 | Test 4 |
|-----------------------|--------------|--------|--------|--------|--------|
| $\Sigma DPCH _E_c$ | dB | -3 | 0 | 0 | 0 |
| I _{or} | | | | | |
| l _{oc} | dBm/3.84 MHz | -60 | | | |
| Information Data Rate | kbps | 12.2 | 64 | 144 | 384 |

Table 8.8: DCH parameters in multipath Case 3 channel

Table 8.9: Performance requirements in multipath Case 3 channel.

| Test Number | $\frac{\hat{I}_{or}}{I_{oc}}$ [dB] | BLER |
|-------------|------------------------------------|------------------|
| 12.2 kbps | 4.7 | 10 ⁻² |
| 64 kbps | 5.2 | 10 ⁻¹ |
| | 8.4 | 10 ⁻² |
| | 12.1 | 10 ⁻³ |
| 144 kbps | 11.7 | 10 ⁻¹ |
| | 15.2 | 10 ⁻² |
| | 17.8 | 10 ⁻³ |
| 384 kbps | 8.2 | 10 ⁻¹ |
| | 11.3 | 10 ⁻² |
| | 13.0 | 10 ⁻³ |

8.4 Base station transmit diversity mode

8.4.1 Demodulation of BCH in Block STTD mode

The performance requirement of BCH is determined by the maximum Block Error Rate (BLER). The BLER is specified for the BCH. BCH is mapped into the Primary Common Control Physical Channel (P-CCPCH).

8.4.1.1 Minimum requirement

For the parameters specified in Table 8.10 the BLER should not exceed the BLER specified in Table 8.11.

NOTE: This requirement doesn't need to be tested.

Table 8.10: P-CCPCH parameters in multipath Case 1 channel

| Parameters | Unit | Test 1 |
|-----------------------|--------------|--------|
| PCCPCH $_E_c$ | dB | -3 |
| I _{or} | | |
| I | dBm/3.84 MHz | -60 |
| Information Data Rate | Kbps | 12.3 |

Table 8.11: Performance requirements in multipath Case 1 channel.

| Test Number | $rac{\hat{I}_{or}}{I_{oc}}$ [dB] | BLER |
|-------------|-----------------------------------|------------------|
| 1 | 8.4 | 10 ⁻² |

3GPP TSG RAN WG4 Meeting #17

R4-010791

Gothenburg, Sweden 21st - 25th May 2001

| | | | | | | CR-Form- |
|-----------------------------------------------------------------------------------------------------|----------|---------------------------------------------|------------------|-----------------|---------------|------------------------------------------|
| CHANGE REQUEST | | | | | | |
| | | | 00 | 00 | 0 | |
| ^ж <mark>25.102</mark> | | CR <mark>65</mark> | ж rev | - * | Current vers | ^{ion:} 4.0.0 [#] |
| | | his former and hottom | of this make a | u la alc at tha | non un tout | aver the 99 averated |
| For <u>HELF</u> on L | ising ti | his form, see bottom | or this page o | r iook at trie | pop-up text | over the # symbols. |
| Proposed change affects: # (U)SIM ME/UE X Radio Access Network Core Network | | | | | | |
| Title: ೫ | BCH | H performance requir | ement | | | |
| Source: # | | NWG4 | | | | |
| | | | | | | |
| Work item code: भ | TEI | | | | <i>Date:</i> | 31.May 2001 |
| Category: # | Α | | | | Release: ೫ | REL-4 |
| | | | | | | |
| | | one of the following cate F (correction) | egories: | | | the following releases: (GSM Phase 2) |
| | - | (corresponds to a co | rrection in an e | arlier release) | | (Release 1996) |
| | | B (Addition of feature), | | | | (Release 1997) |
| | | C (Functional modificat | tion of feature) | | R98 | (Release 1998) |
| | | D (Editorial modification | | | | (Release 1999) |
| | | led explanations of the | | es can | | (Release 4) |
| | be to | und in 3GPP TR 21.900 |). | | REL-5 | (Release 5) |
| | | | | | | |
| Reason for change: # REL-4 Cat A CR corresponding to R99 CR Tdoc R4-010476 | | | | | | |
| Summary of change: # A sentence is added at the minimum requirement stating that it doesn't need to | | | | | | |
| ourninary or orian | yc. •• | be tested. | | ann roquiron | lient etating | |
| | | | | | | |
| Consequences if | ж | Inconsistencys betw | veen releases | | | |
| not approved: | | | | | | |
| | | | | | | |
| Clauses affected: | ж | 8.4.1.1 | | | | |
| Other specs | ж | Other core specif | ications | ж | | |
| affected: | ማ | X Test specification | | 70 | | |
| | - | O&M Specification | | | | |
| | L | | | | | |

Other comments: ೫

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: <u>http://www.3gpp.org/3G_Specs/CRs.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

8.4 Base station transmit diversity mode for 3.84 Mcps TDD Option

8.4.1 Demodulation of BCH in Block STTD mode

The performance requirement of BCH is determined by the maximum Block Error Rate (BLER). The BLER is specified for the BCH. BCH is mapped into the Primary Common Control Physical Channel (P-CCPCH).

8.4.1.1 Minimum requirement

For the parameters specified in Table 8.10 the BLER should not exceed the BLER specified in Table 8.11.

Note: This requirement doesn't need to be tested.

Table 8.10: P-CCPCH parameters in multipath Case 1 channel

| Parameters | Unit | Test 1 | |
|-----------------------|--------------|--------|--|
| $PCCPCH _ E_c$ | dB | -3 | |
| I _{or} | | | |
| I | dBm/3.84 MHz | -60 | |
| Information Data Rate | Kbps | 12.3 | |

Table 8.11: Performance requirements in multipath Case 1 channel.

| Test Number | $rac{\hat{I}_{or}}{I_{oc}}$ [dB] | BLER |
|-------------|-----------------------------------|------------------|
| 1 | 8.4 | 10 ⁻² |

8.5 Power control in downlink for 3.84 Mcps TDD Option