**3GPP TSG RAN Meeting #20** **RP-030273**
**Hameenlinna, FINLAND, 3 - 6 June 2003**

**Title:** **CRs (Rel-5) to TS 25.214**

**Source:** **TSG-RAN WG1**

**Agenda item:** **7.1.5**

**1.** ***TS 25.214*** **(RP-030273)**

| RP Tdoc # | WG Toc# | Spec | CR | Rev | Subject | Phase | Cat | Curren | New V | Workitem | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| RP-030273 | R1-030438 | 25.214 | 314 | 1 | Correction of TPC command combining in SHO | Rel-5 | F | 5.4.0 | 5.5.0 | TEI-5 | |
| RP-030273 | R1-030466 | 25.214 | 319 | - | Correction for HS-DPCCH gain factor in compressed frame | Rel-5 | F | 5.4.0 | 5.5.0 | HSDPA-Phys | |
| RP-030273 | R1-030590 | 25.214 | 320 | 1 | Clarification of HS-SCCH reception in case of minimum interTTI interval is not 1 | Rel-5 | F | 5.4.0 | 5.5.0 | HSDPA-Phys | |
| RP-030273 | R1-030487 | 25.214 | 321 | - | Correction of description of CQI transmission timing calculation | Rel-5 | F | 5.4.0 | 5.5.0 | HSDPA-Phys | |
| RP-030273 | R1-030591 | 25.214 | 322 | 1 | Clarification of the reference power for HS-DPCCH | Rel-5 | F | 5.4.0 | 5.5.0 | HSDPA-Phys | |

**3GPP TSG-RAN WG1 Meeting #32** **R1-030438**
**Marne-la-Vallée, Paris, France, 19th – 23rd May 2003**

CR-Form-v7

# CHANGE REQUEST

⌘ **25.214** **CR** **314** ⌘ **rev** **1** ⌘ Current version: **5.4.0** ⌘

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

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

| | | |
|---|---|---|
| ***Title:*** | ⌘ | Correction of TPC command combining in SHO |
| ***Source:*** | ⌘ | TSG RAN WG1 |
| ***Work item code:*** | ⌘ | TEI-5 |
| ***Date:*** | ⌘ | 2/5/2003 |
| ***Category:*** | ⌘ | **F** |
| ***Release:*** | ⌘ | Rel-5 |

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

*Use one of the following releases:*

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

| | | |
|---|---|---|
| ***Reason for change:*** | ⌘ | The combining of TPC commands in SHO when power control algorithm 2 is used is not properly specified. |
| ***Summary of change:*** | ⌘ | The TPC command combining method for algorithm 2 is corrected to have a similar effect to the combining method for algorithm 1, with preference being given to cells which request a reduction in UL transmit power. |
| ***Consequences if not approved:*** | ⌘ | Inappropriate TPC command combining will result in uncontrolled interference spikes in some cells. |
| ***Clauses affected:*** | ⌘ | 5.1.2.2.3.3 |

| ***Other specs affected:*** ⌘ | Y | N | | ⌘ |
|---|---|---|---|---|
| | | X | Other core specifications | |
| | | X | Test specifications | |
| | | X | O&M Specifications | |

***Other comments:*** ⌘

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Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

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

#### 5.1.2.2.3.3 Combining of TPC commands from radio links of different radio link sets

This subclause describes the general scheme for combination of the TPC commands from radio links of different radio link sets.

The UE shall make a hard decision on the value of each $TPC_i$, where i = 1, 2, …, N and N is the number of TPC commands from radio links of different radio link sets, that may be the result of a first phase of combination according to subclause 5.1.2.2.3.2.

The UE shall follow this procedure for 5 consecutive slots, resulting in N hard decisions for each of the 5 slots.

The sets of 5 slots shall be aligned to the frame boundaries and there shall be no overlap between each set of 5 slots.

The value of TPC_cmd is zero for the first 4 slots. After 5 slots have elapsed, the UE shall determine the value of TPC_cmd for the fifth slot in the following way:

The UE first determines one temporary TPC command, $TPC\_temp_i$, for each of the N sets of 5 TPC commands as follows:

- If all 5 hard decisions within a set are "1", $TPC\_temp_i = 1$.
- If all 5 hard decisions within a set are "0", $TPC\_temp_i = -1$.
- Otherwise, $TPC\_temp_i = 0$.

Finally, the UE derives a combined TPC command for the fifth slot, TPC_cmd, as a function $\gamma$ of all the N temporary power control commands $TPC\_temp_i$:

TPC_cmd($5^{th}$ slot) = $\gamma$ ($TPC\_temp_1$, $TPC\_temp_2$, …, $TPC\_temp_N$), where TPC_cmd($5^{th}$ slot) can take the values 1, 0 or –1, and $\gamma$ is given by the following definition:

~~- TPC_cmd is set to 1 if $\frac{1}{N}\sum_{i=1}^{N} TPC\_temp_i > 0.5$.~~

- ~~TPC_cmd is set to -1 if $\frac{1}{N}\sum_{i=1}^{N} TPC\_temp_i < 0.5$~~ any of $TPC\_temp_1$ to $TPC\_temp_N$ are equal to -1.

- Otherwise, TPC_cmd is set to 1 if $\frac{1}{N}\sum_{i=1}^{N} TPC\_temp_i > 0.5$.

- Otherwise, TPC_cmd is set to 0.

**3GPP TSG-RAN WG1 Meeting #32**
**Paris, France, 19-23 May 2003**

***R1-030466***

*CR-Form-v7*

# CHANGE REQUEST

⌘ **25.214** **CR** **319** ⌘ **rev** **-** ⌘ Current version: **5.4.0** ⌘

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

***Proposed change affects:*** UICC apps⌘ [ ] ME [X] Radio Access Network [X] Core Network [ ]

| | | |
|---|---|---|
| ***Title:*** | ⌘ | Correction for HS-DPCCH gain factor in compressed frame |
| ***Source:*** | ⌘ | TSG RAN WG1 |
| ***Work item code:*** | ⌘ | HSDPA-Phys |
| ***Date:*** | ⌘ | 09 May, 2003 |
| ***Category:*** | ⌘ | **F** |
| ***Release:*** | ⌘ | Rel-5 |

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

*Use one of the following releases:*

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

| | | |
|---|---|---|
| ***Reason for change:*** | ⌘ | In the equation of "$\beta_{HS}$" in compressed frames, "sqrt($N_{pilot,N}$ /$N_{pilot,C}$)" is inverted against the intention to maintain energy of HS-DPCCH between non-compressed frames and compressed frames. |
| ***Summary of change:*** | ⌘ | "sqrt($N_{pilot,N}$ /$N_{pilot,C}$)" is changed to "sqrt($N_{pilot,C}$ /$N_{pilot,N}$)" |
| ***Consequences if not approved:*** | ⌘ | Transmit power of HS-DPCCH becomes unnecessarily large in compressed frames. |

| | | |
|---|---|---|
| ***Clauses affected:*** | ⌘ | 5.1.2.5A |

| ***Other specs affected:*** ⌘ | Y | N | |
|---|---|---|---|
| | | X | Other core specifications |
| | | X | Test specifications |
| | | X | O&M Specifications |

⌘

***Other comments:*** ⌘

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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.

## 5.1.2.5A Setting of the uplink DPCCH/HS-DPCCH power difference

When an HS-DPCCH is active, the relative power offset $\Delta_{HS\text{-}DPCCH}$ between the DPCCH and the HS-DPCCH for each HS-DPCCH slot shall be set as follows.

For HS-DPCCH slots carrying HARQ Acknowledgement :

$\Delta_{HS\text{-}DPCCH} = \Delta_{ACK}$ if the corresponding HARQ Acknowledgement is equal to 1

$\Delta_{HS\text{-}DPCCH} = \Delta_{NACK}$ if the corresponding HARQ Acknowledgement is equal to 0

For HS-DPCCH slots carrying CQI :

$\Delta_{HS\text{-}DPCCH} = \Delta_{CQI}$

The values for $\Delta_{ACK}$, $\Delta_{NACK}$ and $\Delta_{CQI}$ are set by higher layers.

The setting of the power difference between DPCCH and HS-DPCCH is independent of the inner loop power control.

Then, in non-compressed frames $\beta_{HS}$, which is the gain factor defined in [3] subclause 4.2.1, is calculated according to

$$\beta_{HS} = \beta_c \cdot 10^{\left(\frac{\Delta_{HS-DPCCH}}{20}\right)},$$

where $\beta_c$ value is signalled by higher-layer or calculated as described in subclause 5.1.2.5.3 or 5.1.2.5.4.

When HS-DPCCH is transmitted in compressed frames, $\beta_{HS}$ is calculated according to

~~$\beta_{HS} = \beta_c \cdot 10^{\left(\frac{\Delta_{HS-DPCCH}}{20}\right)} \cdot \sqrt{\frac{N_{pilot,N}}{N_{pilot,C}}}$~~ $\beta_{HS} = \beta_c \cdot 10^{\left(\frac{\Delta_{HS-DPCCH}}{20}\right)} \cdot \sqrt{\frac{N_{pilot,C}}{N_{pilot,N}}}$,

where $N_{pilot,C}$ is the number of pilot bits per slot on the DPCCH in compressed frames, and $N_{pilot,N}$ is the number of pilot bits per slot in non-compressed frames.

The gain factor $\beta_{HS}$ may vary on slot basis depending on the current power offset $\Delta_{HS\text{-}DPCCH}$ and whether the compressed mode is used or not in UL DPCH. When the HS-DPCCH and the DPCCH are not slot aligned, the reference DPCCH power shall be the one used in the DPCCH slot being transmitted at the beginning i.e. slot boundary of the HS-DPCCH slot.

**3GPP TSG-RAN WG1 Meeting #32**
**Paris, France, 19-23 May 2003**

***R1-030590***

*CR-Form-v7*

# CHANGE REQUEST

⌘ **25.214** **CR** **320** ⌘ **rev** **1** ⌘ Current version: **5.4.0** ⌘

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

***Proposed change affects:*** UICC apps⌘ [ ] ME [X] Radio Access Network [X] Core Network [ ]

| | | |
|---|---|---|
| ***Title:*** | ⌘ | Clarification of HS-SCCH reception in case of minimum interTTI interval is not 1 |
| ***Source:*** | ⌘ | TSG RAN WG1 |
| ***Work item code:*** | ⌘ | HSDPA-Phys |
| ***Date:*** | ⌘ | 20 May, 2003 |
| ***Category:*** | ⌘ | **F** |
| ***Release:*** | ⌘ | Rel-5 |

*Use one of the following categories:*
***F*** *(correction)*
***A*** *(corresponds to a correction in an earlier release)*
***B*** *(addition of feature),*
***C*** *(functional modification of feature)*
***D*** *(editorial modification)*
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*R98* *(Release 1998)*
*R99* *(Release 1999)*
*Rel-4* *(Release 4)*
*Rel-5* *(Release 5)*
*Rel-6* *(Release 6)*

| | | |
|---|---|---|
| ***Reason for change:*** | ⌘ | For UE whose minimum inter-TTI interval is not 1, the meaning of "the previous subframe" might be misinterpreted as "the previous subframe out of the subframes that the UE shall monitor". Therefore, it is necessary to clarify the relation between the previous subframe and the current subframe. |
| ***Summary of change:*** | ⌘ | "the previous subframe" is modified to "the immediately preceding subframe". |
| ***Consequences if not approved:*** | ⌘ | The UE whose minimum inter-TTI interval is not 1 may miss the control information on the HS-SCCH intended for this UE. |

| | | |
|---|---|---|
| ***Clauses affected:*** | ⌘ | 6A.1.1 |

| ***Other specs affected:*** ⌘ | Y | N | | ⌘ |
|---|---|---|---|---|
| | | X | Other core specifications | |
| | | X | Test specifications | |
| | | X | O&M Specifications | |

***Other comments:*** ⌘

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## 6A .1.1 UE procedure for receiving HS-DSCH

If the UE did not detect control information intended for this UE on any of the HS-SCCHs in the HS-SCCH set in the ~~previous~~ immediately preceding subframe, the UE shall monitor all HS-SCCHs in the HS-SCCH set. If the UE did detect control information intended for this UE in the ~~previous~~ immediately preceding subframe, it is sufficient to only monitor the same HS-SCCH used in the ~~previous~~ immediately preceding subframe.

If a UE detects that one of the monitored HS-SCCHs carries control information intended for this UE, the UE shall start receiving the HS-PDSCHs indicated by this control information.

The transport block size information shall be derived from the signaled TFRI value as defined in [9].

After decoding the HS-PDSCH data, the UE shall transmit an hybrid ARQ ACK or NACK as determined by the MAC-hs based on the CRC check. The UE shall repeat the transmission of the ACK/NACK information over *N_acknack_transmit* consecutive HS-DPCCH sub-frames, in the slots allocated to the HARQ-ACK as defined in [1]. When *N_ acknack_transmit* is greater than one, the UE shall not attempt to receive nor decode transport blocks from the HS-PDSCH in HS-DSCH sub-frames $n + 1$ to $n + (N\_acknack\_transmit - 1)$ where $n$ is the number of the last HS-DSCH sub-frame in which a transport block has been received.

If control information is not detected on any of the HS-SCCHs in the HS-SCCH set, neither ACK, nor NACK, shall be transmitted in the corresponding subframe.

**3GPP TSG-RAN WG1 Meeting #32** ***Tdoc ⌘R1-030487***
**Disneyland, Marne la Vallée, France, 19-23 May 2003**

*CR-Form-v7*

# CHANGE REQUEST

⌘ **25.214** **CR** **321** ⌘ **rev** **-** ⌘ Current version: **5.4.0** ⌘

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

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

| | | |
|---|---|---|
| ***Title:*** | ⌘ | Correction of description of CQI transmission timing calculation |
| ***Source:*** | ⌘ | TSG RAN WG1 |
| ***Work item code:*** | ⌘ | HSDPA-Phys |
| ***Date:*** | ⌘ | 07/04/2003 |
| ***Category:*** | ⌘ | **F** |
| ***Release:*** | ⌘ | Rel-5 |

*Use one of the following categories:*
***F*** *(correction)*
***A*** *(corresponds to a correction in an earlier release)*
***B*** *(addition of feature),*
***C*** *(functional modification of feature)*
***D*** *(editorial modification)*
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*2 (GSM Phase 2)*
*R96 (Release 1996)*
*R97 (Release 1997)*
*R98 (Release 1998)*
*R99 (Release 1999)*
*Rel-4 (Release 4)*
*Rel-5 (Release 5)*
*Rel-6 (Release 6)*

***Reason for change:*** ⌘

- The equation in TS 25.214 section 6A.1.2 and the description of TS 25.211 section 7.7 imply that "$n \times 256 + i \times 2560 = m \times 256$". Considering this relation, it is not clear whether the statement "*n* being equal to the value of *m* fulfilling the requirement described in subclause 7.7 in [1]" in TS 25.214 section 6A.1.2 holds.
- The formula in TS 25.214 section 6A.1.2 tries to relate the timing of the HS-DPCCH sub-frame to the DPCH timing (CFN) without need for specifying the exact position of HS-PDSCH sub-frame, e.g., "Where is sub-frame #0?" by introducing uplink DPCCH slot counter "*i*". Since the relation between HS-PDSCH sub-frame and HS-DPCCH sub-frame is now fully established and the exact position of HS-PDSCH sub-frame is now described, the formula can be simplified to skip the uplink DPCCH slot counter.
- The range of "*k*" is defined in TS 25.331 as {0,2,4,8,10,20,40,80,160} ms. On the other hand, "*k*" in TS 25.214 has been understood so far in terms of number of subframes. This mismatch should be corrected.

***Summary of change:*** ⌘

- The formula in TS 25.214 section 6A.1.2 is simplified by replacing "$n \times 256 + i \times 2560$" with "$m \times 256$" and the related wording is corrected.
- Meaning of "*k*" is clarified by introducing "*k*' = *k*/(2ms)" in the formula.

***Consequences if not approved:*** ⌘

- Ambiguities about "*m*" and the complicated formula may cause misinterpretation of the specification.
- Mismatch in meaning of "*k*" between TS 25.214 and TS 25.331 will result in incorrect implmentation.

***Clauses affected:*** ⌘ 6A.1.2

| | | Y | N | | | |
|---|---|---|---|---|---|---|
| ***Other specs affected:*** | ⌘ | | X | Other core specifications | ⌘ | |
| | | | X | Test specifications | | |
| | | | X | O&M Specifications | | |
| ***Other comments:*** | ⌘ | | | | | |

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## 6A .1.2 UE procedure for reporting channel quality indication (CQI)

1) The UE derives the CQI value as defined in 6A .2.

2) For k = 0, the UE shall not transmit the CQI value.
For k > 0, the UE shall transmit the CQI value in each subframe that starts ~~*n*~~*m*×256 chips after the start of ~~slot *i* on~~ the associated uplink DPCCH frame with ~~*i*~~ *m* ~~simultaneously~~ fulfilling

~~$(5\times CFN + \lceil (n\times 256chip + i\times 2560chip)/7680chip \rceil) \bmod k = 0$ and $i \bmod 3 = 0$,~~

$(5\times CFN + \lceil m\times 256chip/7680chip \rceil) \bmod k' = 0$ with $k' = k/(2ms)$,

where CFN denotes the connection frame number for the associated DPCH and ~~*n* being equal to the value of~~ the set of five possible values of *m* ~~fulfilling the requirement~~is calculated as described in subclause 7.7 in [1].

3) The UE shall repeat the transmission of the CQI value derived in 1) over the next *(N_cqi_transmit – 1)* consecutive HS-DPCCH sub frames in the slots respectively allocated to the CQI as defined in [1].

4) The UE shall not transmit the CQI in other subframes than those described in 2) and 3).

**3GPP TSG-RAN1 Meeting #32**
**Paris, France, 19-23 May 2003**

***Tdoc R1-030591***

*CR-Form-v7*

# CHANGE REQUEST

⌘ **25.214** **CR** **322** ⌘ **rev** **1** ⌘ Current version: **5.4.0** ⌘

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

***Proposed change affects:*** UICC apps⌘ [ ] ME [X] Radio Access Network [X] Core Network [ ]

| | | |
|---|---|---|
| ***Title:*** | ⌘ | Clarification of the reference power for HS-DPCCH |
| ***Source:*** | ⌘ | TSG RAN WG1 |
| ***Work item code:*** | ⌘ | HSPDA-Phys |
| ***Date:*** | ⌘ | 22/05/2003 |
| ***Category:*** | ⌘ | **F** |
| ***Release:*** | ⌘ | Rel-5 |

*Use one of the following categories:*
***F*** *(correction)*
***A*** *(corresponds to a correction in an earlier release)*
***B*** *(addition of feature),*
***C*** *(functional modification of feature)*
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| | |
|---|---|
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| *R99* | *(Release 1999)* |
| *Rel-4* | *(Release 4)* |
| *Rel-5* | *(Release 5)* |
| *Rel-6* | *(Release 6)* |

| | | |
|---|---|---|
| ***Reason for change:*** | ⌘ | It is unclear whether or not the HS-DPCCH power is changed within a HS-DPCCH slot in accordance with the update of the DPCCH power done by the inner-loop power control. |
| ***Summary of change:*** | ⌘ | Text is modified to specify that the power ratio between the DPCCH and the HS-DPCCH is not changed when DPCCH power changes except at the start and at the end of a compressed frame. |
| ***Consequences if not approved:*** | ⌘ | Ambiguity regarding the setting of the HS-DPCCH power remains. Moreover, it is allowed to change power ratio between the DPCCH and the HS-DPCCH by DPCCH power change. |

| | | |
|---|---|---|
| ***Clauses affected:*** | ⌘ | 5.1.2.5A |

| ***Other specs affected:*** ⌘ | Y | N | |
|---|---|---|---|
| | | X | Other core specifications |
| | | X | Test specifications |
| | | X | O&M Specifications |

⌘

***Other comments:*** ⌘

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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.

### 5.1.2.5A Setting of the uplink DPCCH/HS-DPCCH power difference

When an HS-DPCCH is active, the ~~relative~~ power offset $\Delta_{HS\text{-}DPCCH}$ ~~between the DPCCH and the HS-DPCCH~~ for each HS-DPCCH slot shall be set as follows.

For HS-DPCCH slots carrying HARQ Acknowledgement :

$\Delta_{HS\text{-}DPCCH} = \Delta_{ACK}$ if the corresponding HARQ Acknowledgement is equal to 1

$\Delta_{HS\text{-}DPCCH} = \Delta_{NACK}$ if the corresponding HARQ Acknowledgement is equal to 0

For HS-DPCCH slots carrying CQI :

$\Delta_{HS\text{-}DPCCH} = \Delta_{CQI}$

The values for $\Delta_{ACK}$, $\Delta_{NACK}$ and $\Delta_{CQI}$ are set by higher layers.

~~The setting of the power difference between DPCCH and HS-DPCCH is independent of the inner loop power control.~~

Then, in non-compressed frames $\beta_{HS}$, which is the gain factor defined in [3] subclause 4.2.1, is calculated according to

$$\beta_{HS} = \beta_c \cdot 10^{\left(\frac{\Delta_{HS-DPCCH}}{20}\right)},$$

where $\beta_c$ value is signalled by higher-layer or calculated as described in subclause 5.1.2.5.3 or 5.1.2.5.4.

With the exception of the start and end of compressed frames, any DPCCH power change shall not modify the power ratio between the DPCCH and the HS-DPCCH. The power ratio between the DPCCH and the HS-DPCCH during compressed DPCCH frames is described below.

During the period between the start and end of a compressed DPCCH frame, ~~W~~when HS-DPCCH is transmitted ~~in compressed frames~~, $\beta_{HS}$ is calculated according to

$$\beta_{HS} = \beta_c \cdot 10^{\left(\frac{\Delta_{HS-DPCCH}}{20}\right)} \cdot \sqrt{\frac{N_{pilot,N}}{N_{pilot,C}}},$$

where $N_{pilot,C}$ is the number of pilot bits per slot on the DPCCH in compressed frames, and $N_{pilot,N}$ is the number of pilot bits per slot in non-compressed frames.

Thus the gain factor $\beta_{HS}$ ~~may~~ varies~~y on slot basis~~ depending on the current power offset $\Delta_{HS\text{-}DPCCH}$ and on whether the ~~compressed mode is used or not in~~ UL DPCCH is currently in a compressed frame. ~~When the HS-DPCCH and the DPCCH are not slot aligned, the reference DPCCH power shall be the one used in the DPCCH slot being transmitted at the beginning i.e. slot boundary of the HS-DPCCH slot.~~