

TSG-RAN Meeting #8
Düsseldorf, Germany, 21 – 23 June 2000

RP-000205

Title: Agreed CRs to TS 25.102

Source: TSG-RAN WG4

Agenda item: 5.4.3

Doc-1st-	Spec	CR	Re	Phas	Subject	Cat	Version	Version
RP-000205	25.102	026		R99	Correction of DL measurement channels for TDD-mode	F	3.2.0	3.3.0
RP-000205	25.102	027		R99	Reference Measurement Channel for UE Peak Code Domain	F	3.2.0	3.3.0
RP-000205	25.102	028		R99	Correction for Uplink power control	F	3.2.0	3.3.0
RP-000205	25.102	029		R99	UE TDD P-CCPCH Block STTD performance requirements	F	3.2.0	3.3.0
RP-000205	25.102	030		R99	Modification to the handling of UE TDD Measurement Uncertainty	F	3.2.0	3.3.0
RP-000205	25.102	031		R99	Clarification of the specification on Peak Code Domain Error	F	3.2.0	3.3.0

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25.102 CR 026

Current Version: **3.2.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: **RAN 8**
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Form: CR cover sheet, version 2 for 3GPP and SMG

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Proposed change affects:
(at least one should be marked with an X)

(U)SIM ME UTRAN / Radio Core Network

Source:

RAN WG4

Date:

22/05/2000

Subject:

Reference Measurement Channels

Work item:

Category:

(only one category shall be marked with an X)

F Correction
A Corresponds to a correction in an earlier release
B Addition of feature
C Functional modification of feature
D Editorial modification

Release:

Phase 2
Release 96
Release 97
Release 98
Release 99
Release 00

Reason for change:

The current measurement channels are not in line with the WG1 and WG2 specifications.

Clauses affected:

Appendix A

Other specs affected:

Other 3G core specifications → List of CRs:
Other GSM core specifications → List of CRs:
MS test specifications → List of CRs:
BSS test specifications → List of CRs:
O&M specifications → List of CRs:

Other comments:

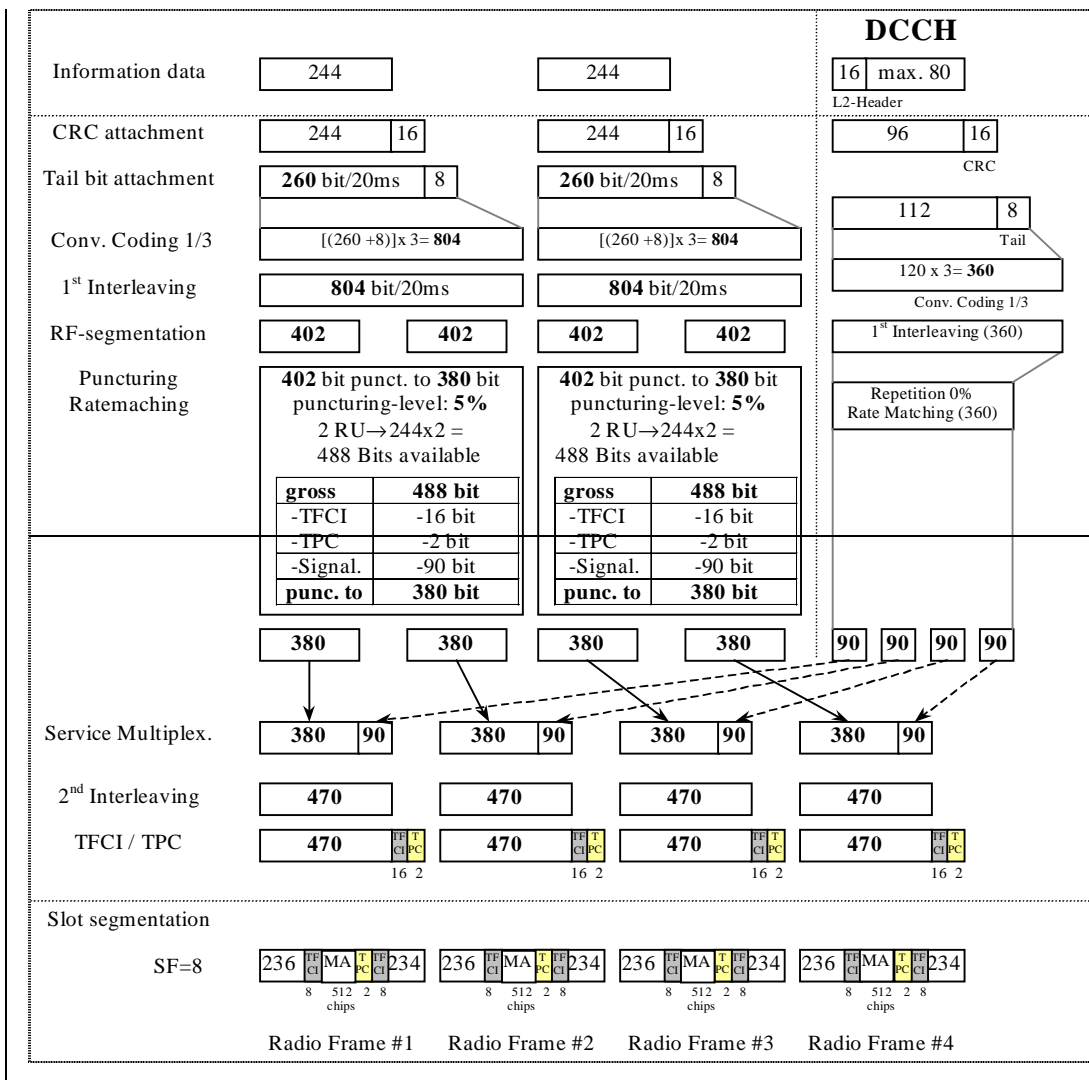
Annex A (normative): Measurement channels

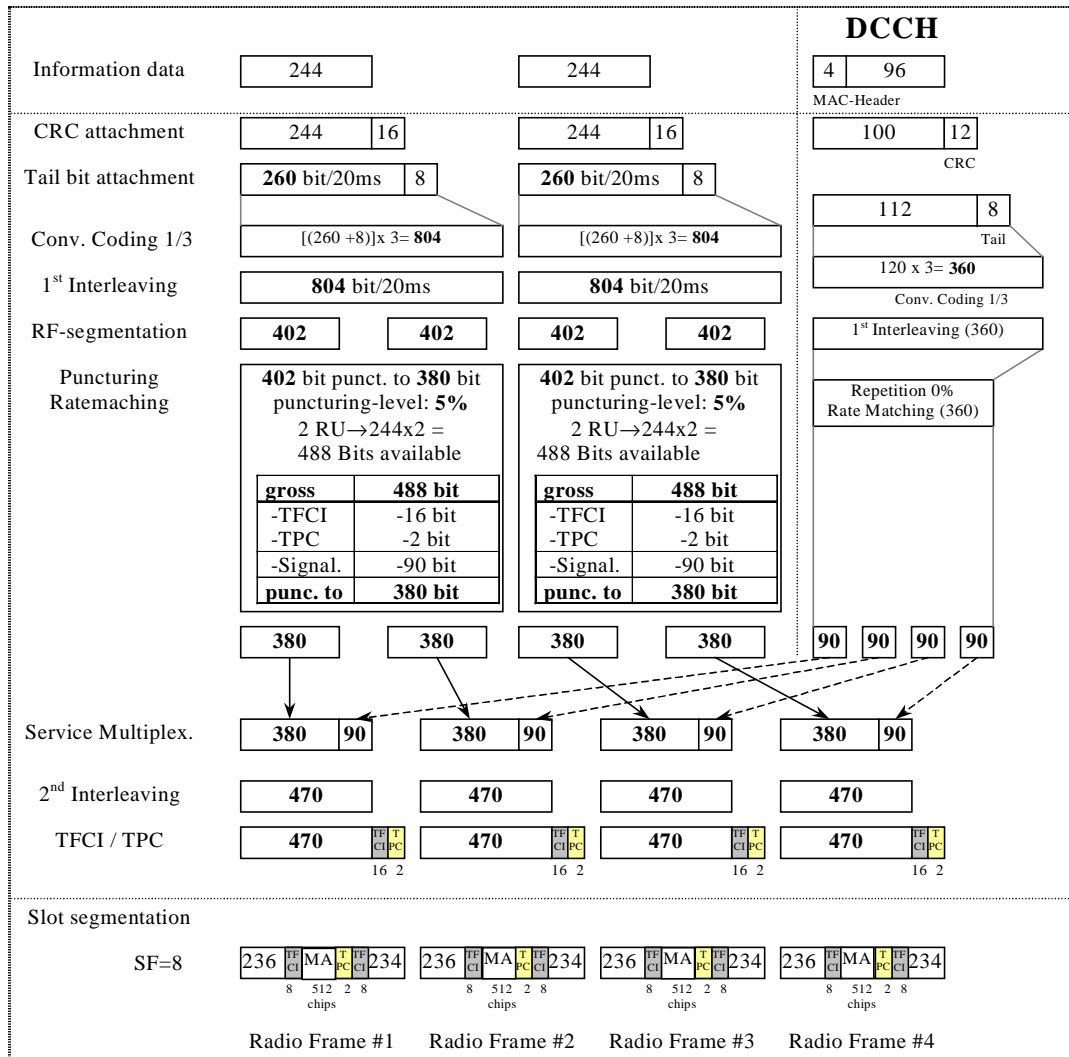
A.1 General

A.2 Reference measurement channel

A.2.1 UL reference measurement channel (12.2 kbps)

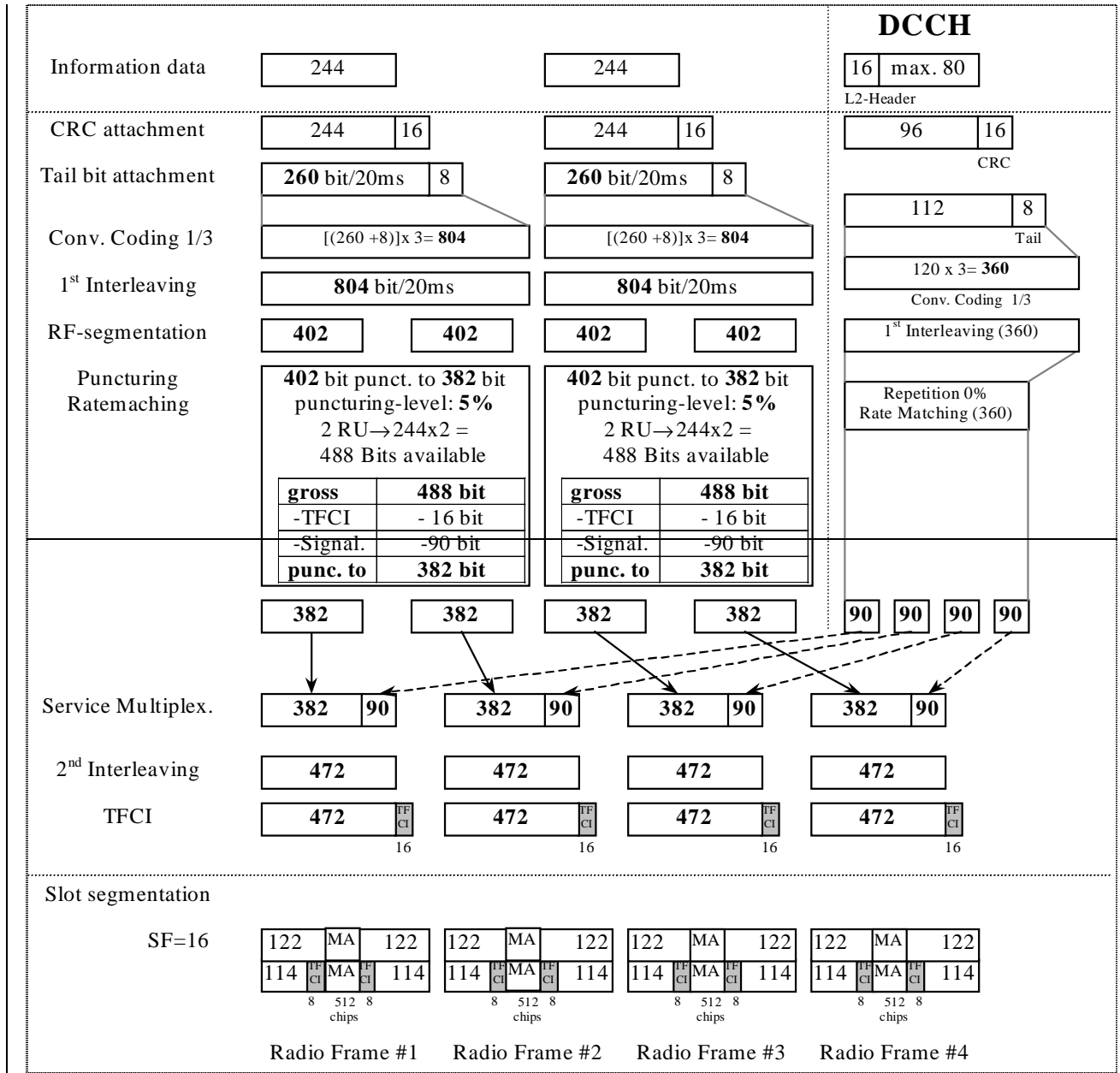
Parameter	
Information data rate	12.2 kbps
RU's allocated	2 RU
Midamble	512 chips
Interleaving	20 ms
Power control	2 Bit/user
TFCI	16 Bit/user
Inband signalling DCCH	2 kbps
Puncturing level at Code rate 1/3 : DCH / DCCH	5% / 0%

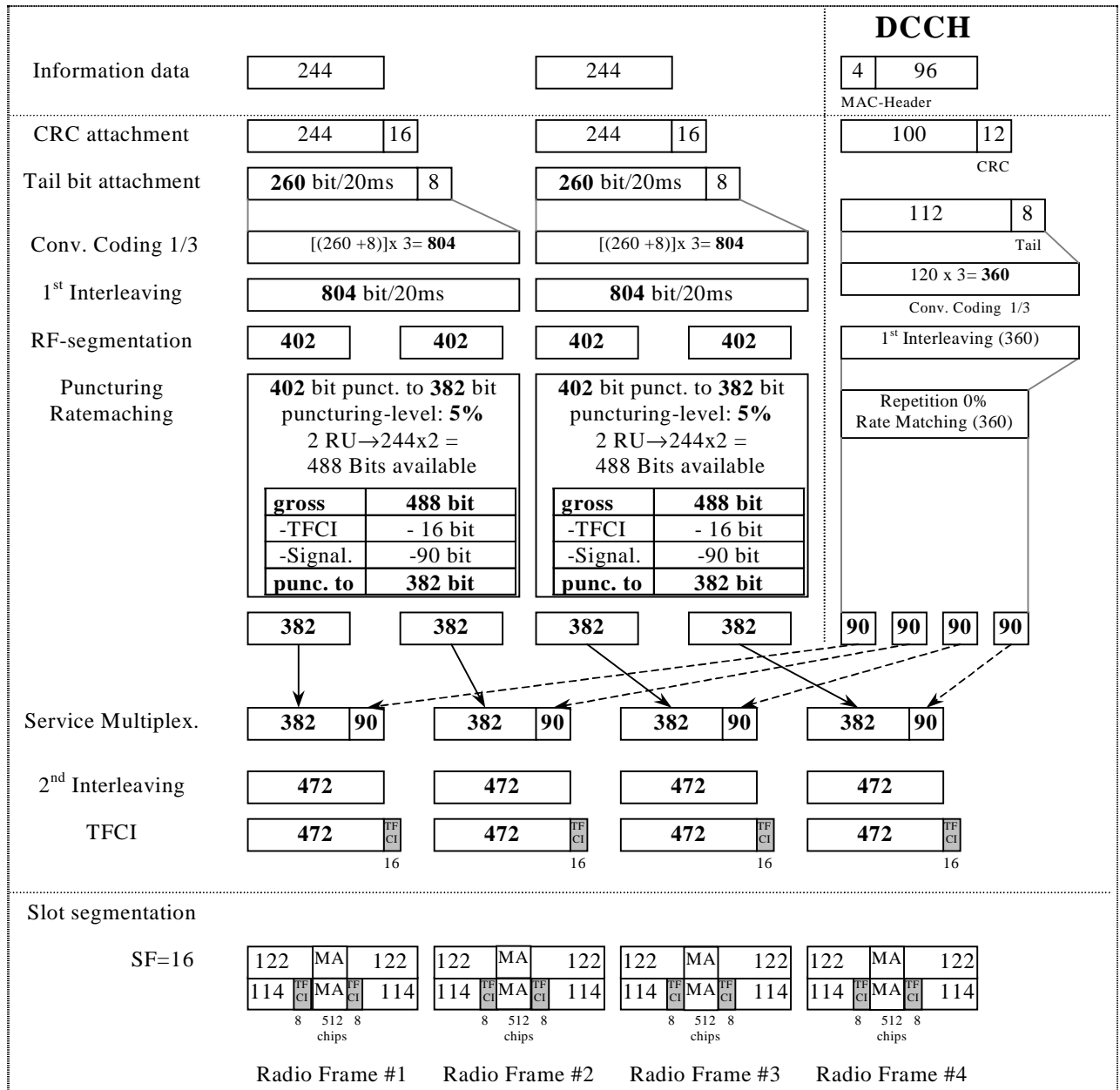




A.2.2 DL reference measurement channel (12.2 kbps)

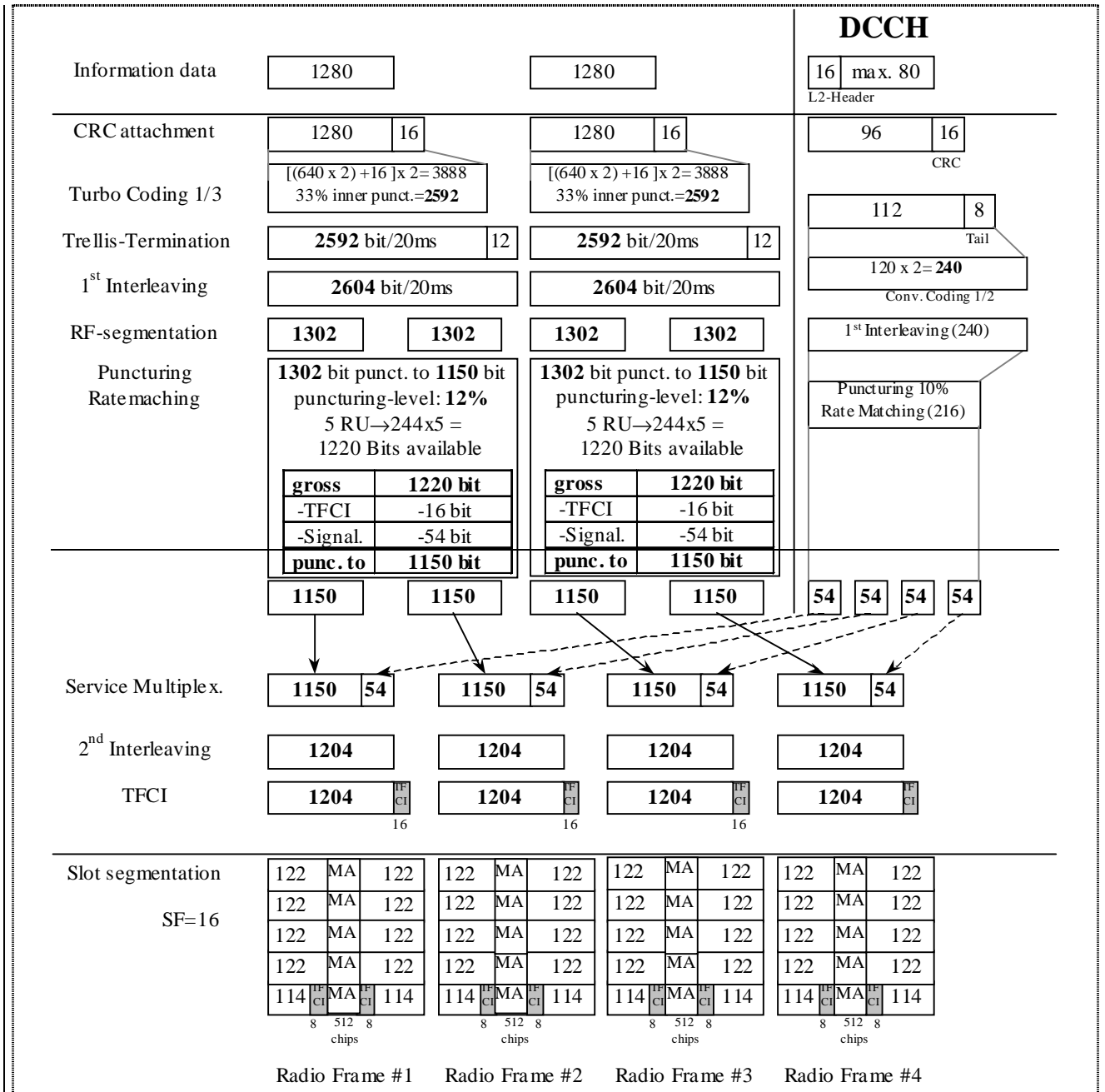
Parameter	
Information data rate	12.2 kbps
RU's allocated	2 RU
Midamble	512 chips
Interleaving	20 ms
Power control	0 Bit/user
TFCI	16 Bit/user
Inband signalling DCCH	2 kbps
Puncturing level at Code rate 1/3 : DCH / DCCH	5% / 0 %

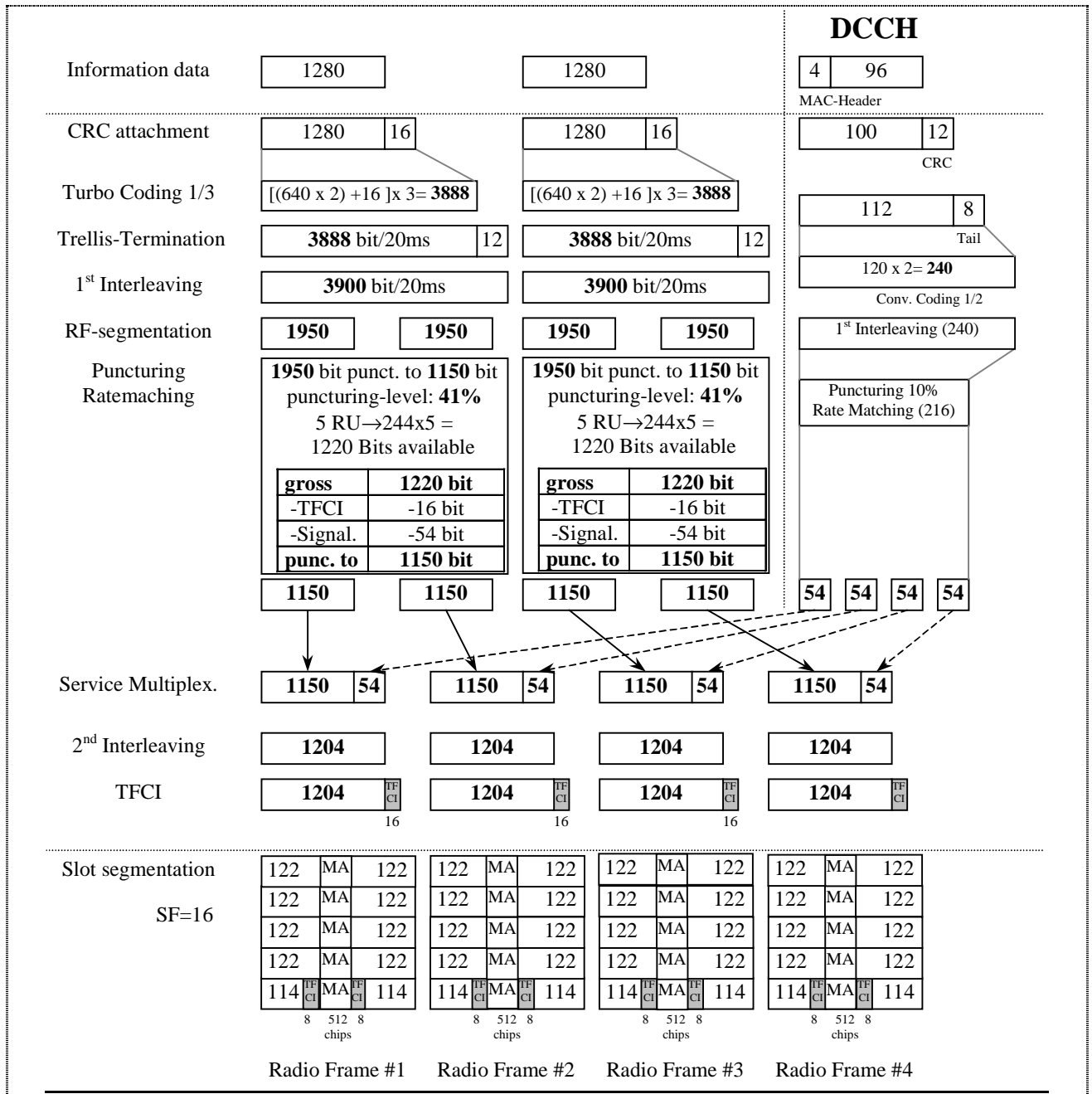




A.2.3 DL reference measurement channel (64 kbps)

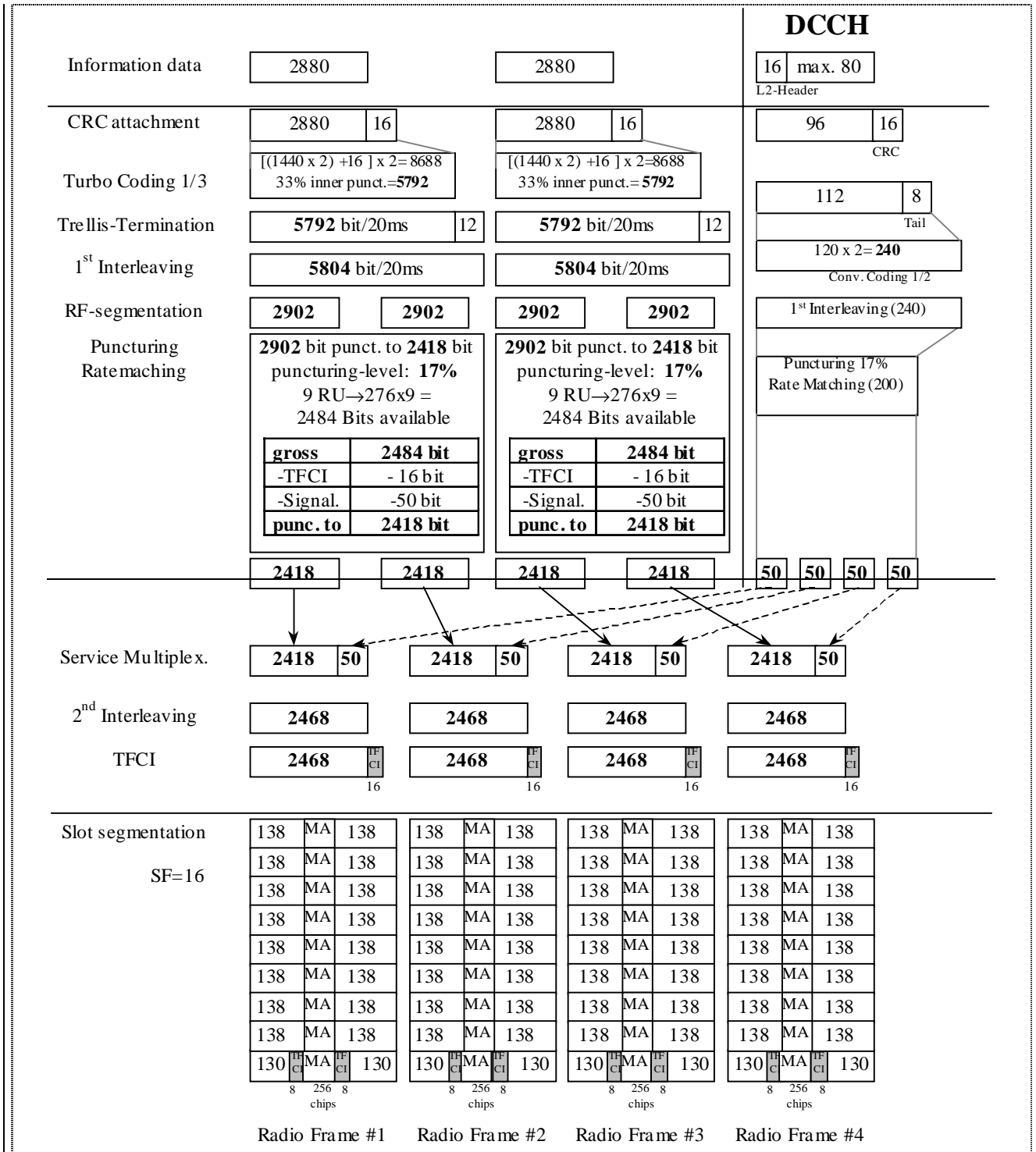
Parameter	
Information data rate	64 kbps
RU's allocated	5 codes SF16 = 5RU
Midamble	512 chips
Interleaving	20 ms
Power control	0 Bit/user
TFCI	16 Bit/user
Inband signalling DCCH	2 kbps
Puncturing level at Code rate : 1/3 DCH / 1/2 DCCH	41.1% / 10%

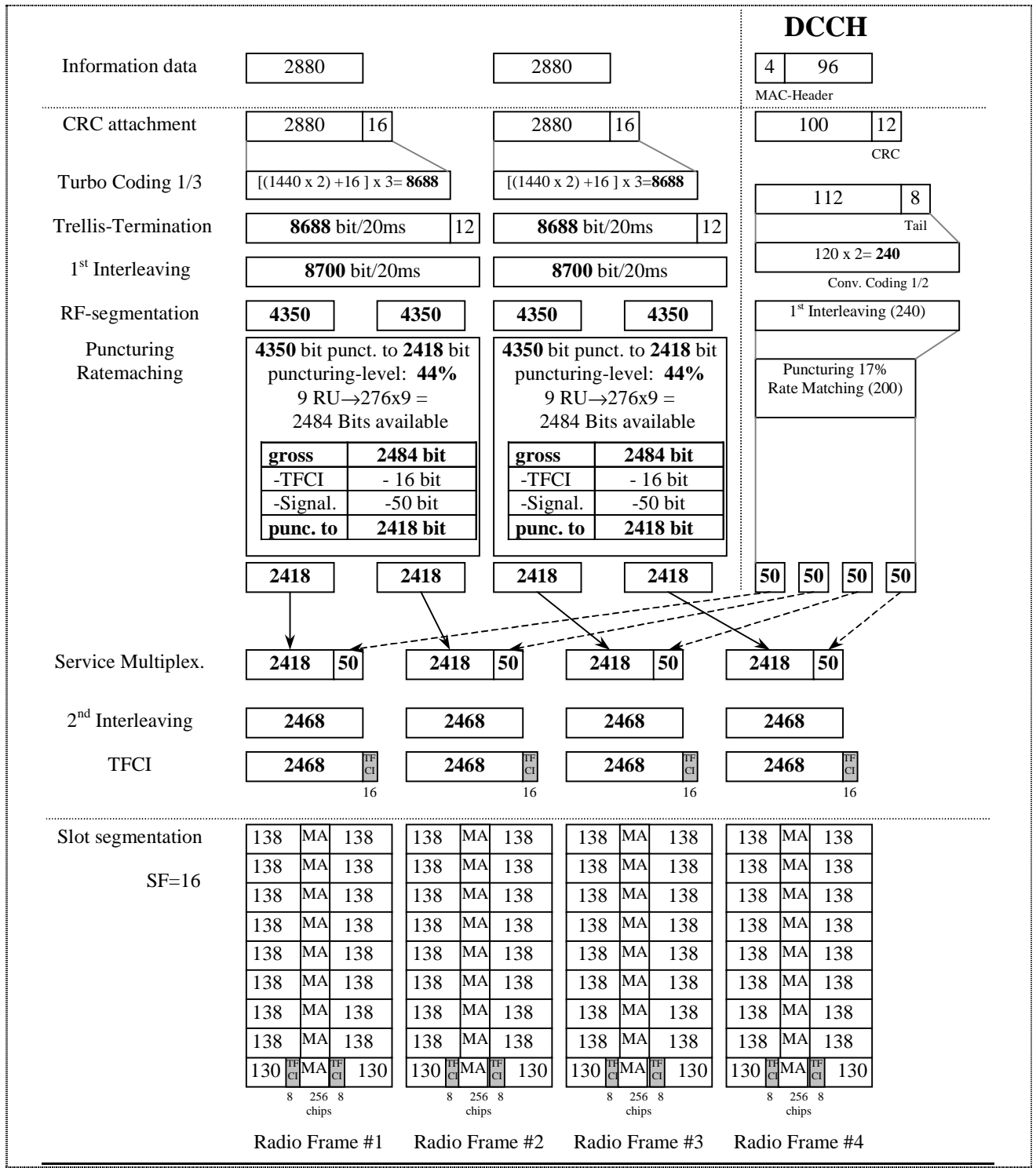




A.2.4 DL reference measurement channel (144 kbps)

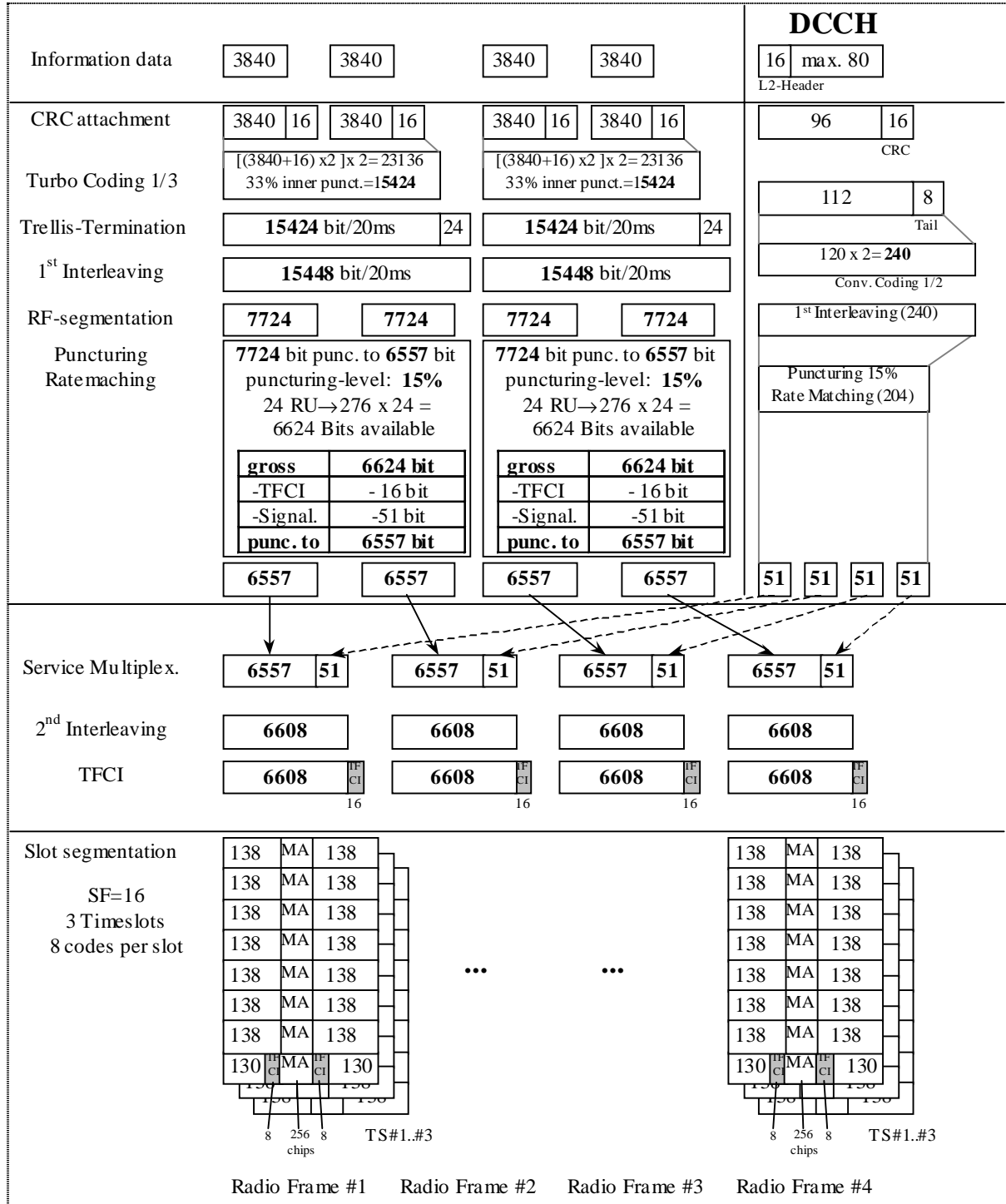
Parameter	
Information data rate	144 kbps
RU's allocated	9 codes SF16 = 9RU
Midamble	256 chips
Interleaving	20 ms
Power control	0 Bit/user
TFCI	16 Bit/user
Inband signalling DCCH	2 kbps
Puncturing level at Code rate: 1/3 DCH / 1/2 DCCH	44.5% / 16.6%

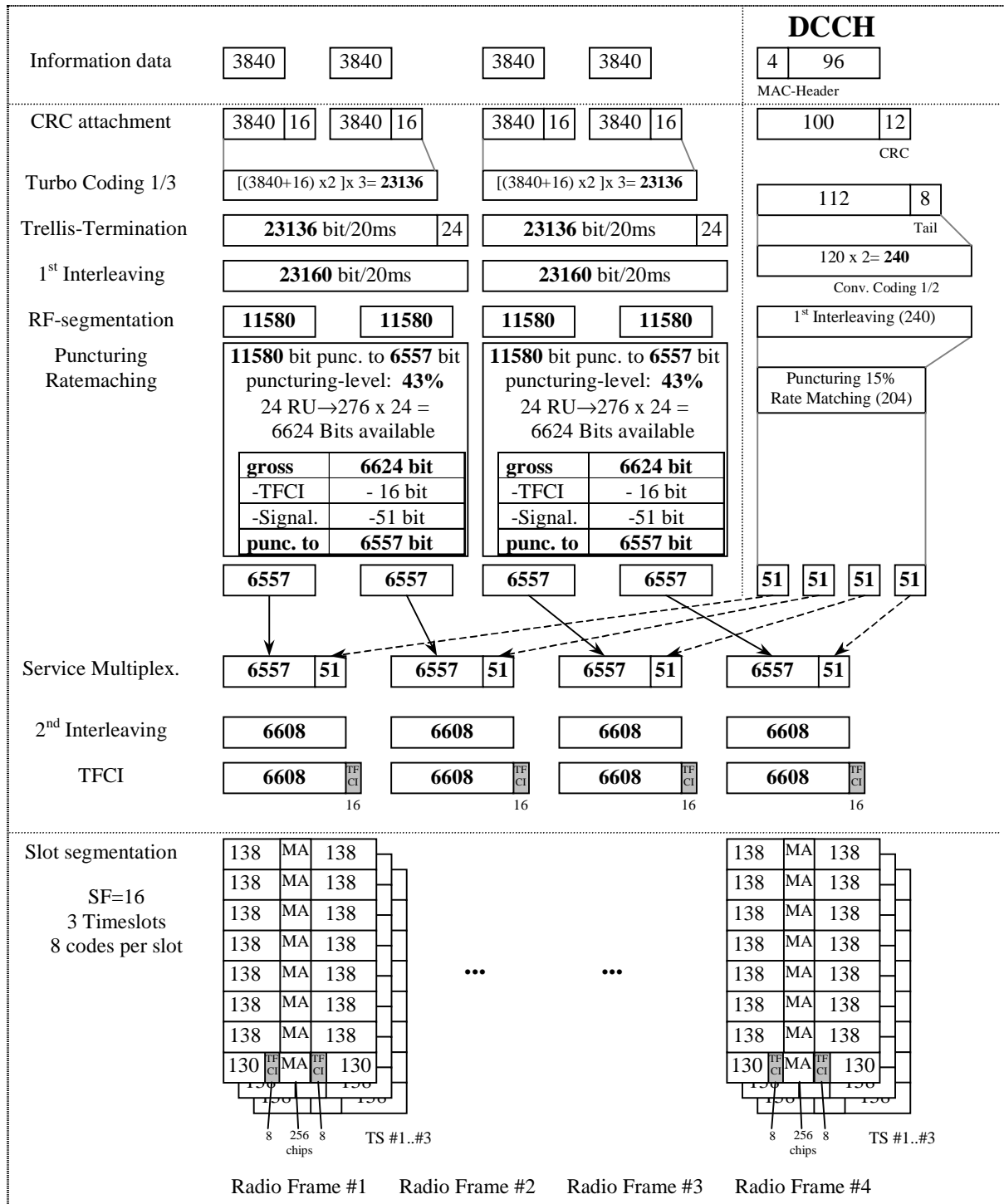




A.2.5 DL reference measurement channel (384 kbps)

Parameter	
Information data rate	384 kbps
RU's allocated	8*3TS = 24RU
Midamble	256 chips
Interleaving	20 ms
Power control	0 Bit/user
TFCI	16 Bit/user
Inband signalling DCCH	2 kbps
Puncturing level at Code rate : 1/3 DCH / 1/2 DCCH	43.4% / 15.3%



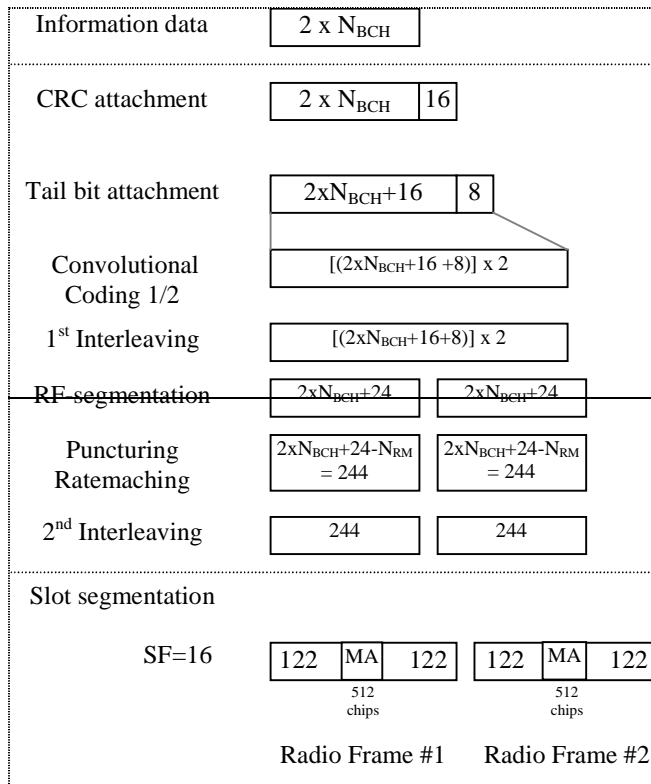


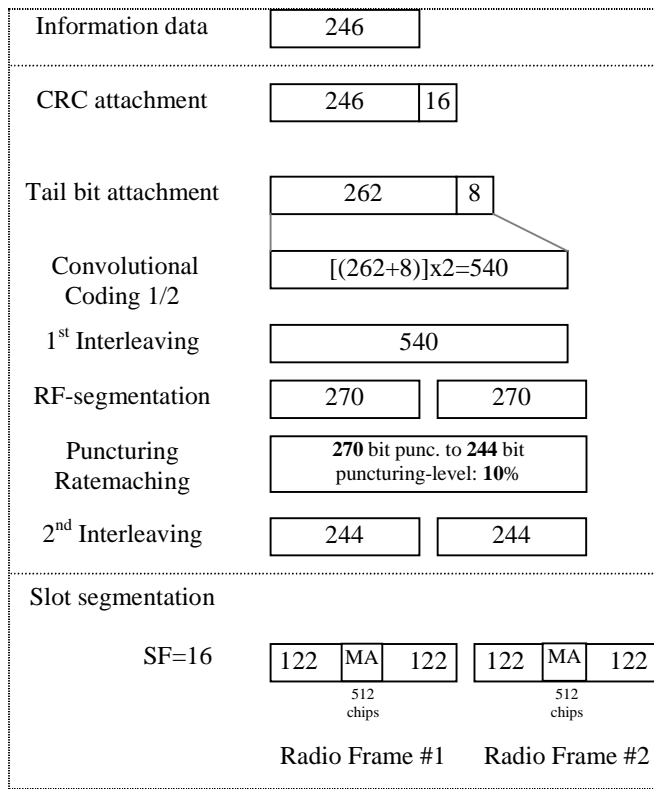
A.2.6 BCH reference measurement channel

[mapped to 1 code SF16]

Parameter	
Information data rate:	
0% puncturing rate at CR=1/2	11.0 kbps
40% puncturing rate at CR=1/2	12.34 kbps
$N_{BCH} = \frac{244 + N_{RM} - 24}{2}$	
RU's allocated	1 RU
Midamble	512 chips
Interleaving	20 ms
Power control	0 bit
TFCI	0 bit
Puncturing level	10%

N_{BCH} = number of bits per TB





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25.102 CR 027

Current Version: **3.2.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: **RAN 8**
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Proposed change affects:
(at least one should be marked with an X)

(U)SIM ME UTRAN / Radio Core Network

Source: RAN WG4

Date: 22/05/2000

Subject: Reference Measurement Channel for Peak Code Domain Error Test

Work item:

Category:

(only one category shall be marked with an X)

F Correction
A Corresponds to a correction in an earlier release
B Addition of feature
C Functional modification of feature
D Editorial modification

Release:

Phase 2
Release 96
Release 97
Release 98
Release 99
Release 00

Reason for change:

The current uplink reference measurement channel is not applicable to the peak code domain error test. Therefore an additional uplink reference measurement channel is proposed.

Clauses affected: 6.8.3; Appendix A

Other specs affected:

Other 3G core specifications → List of CRs:
Other GSM core specifications → List of CRs:
MS test specifications → List of CRs:
BSS test specifications → List of CRs:
O&M specifications → List of CRs:

Other comments:

6.8.3 Peak Code Domain Error

This specification is applicable for multi-code transmission only.

The code domain error is computed by projecting the error vector power onto the code domain at the maximum spreading factor. The error power for each code is defined as the ratio to the mean power of the reference waveform expressed in dB. And the Peak Code Domain Error is defined as the maximum value for Code Domain Error. The measurement interval is one timeslot.

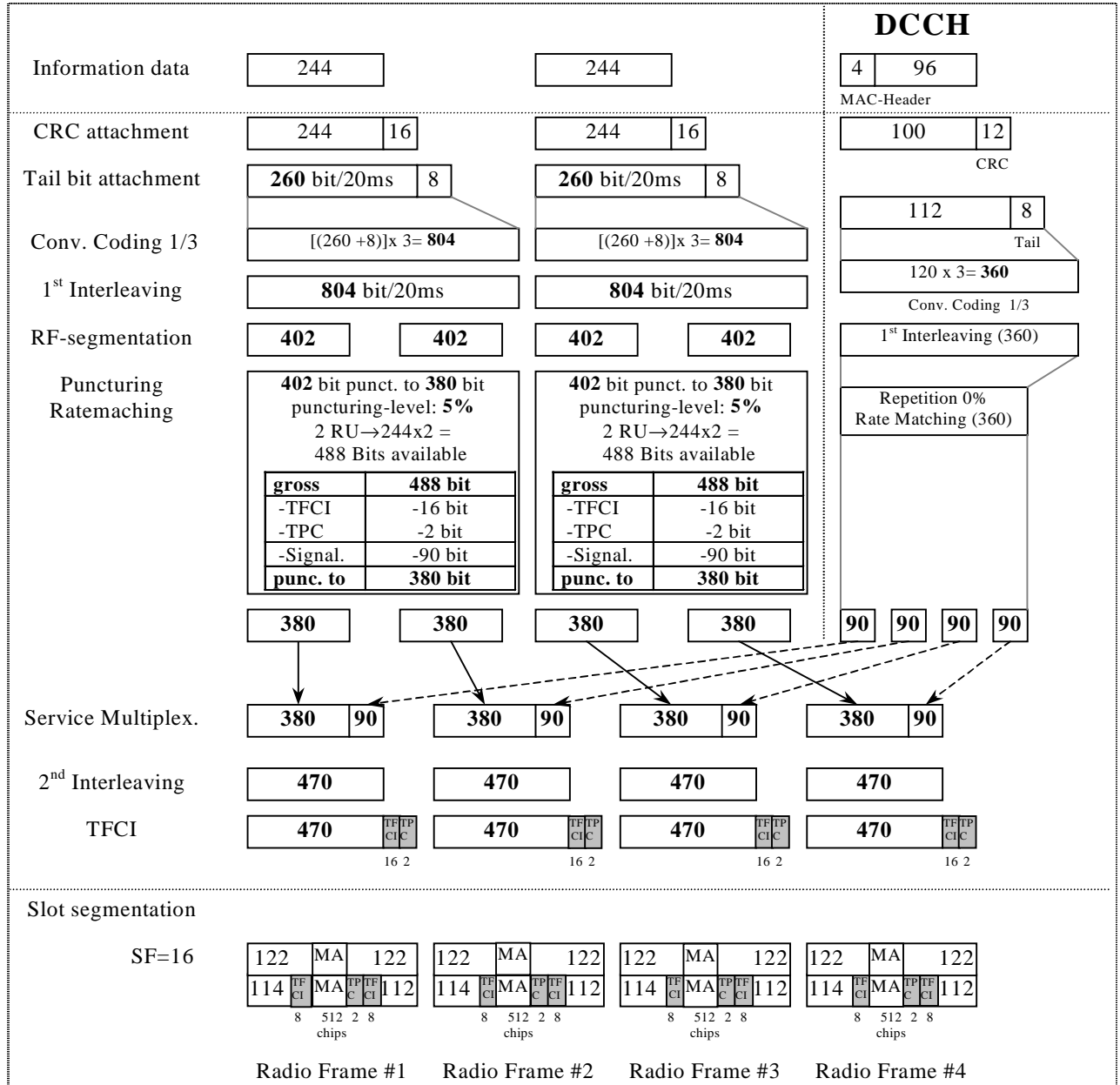
6.8.3.1 Minimum Requirement

The peak code domain error shall not exceed -21 dB for the parameters specified in Table 6.9.

The requirements are defined using the UL reference measurement channel specified in subclause A.2.x.

A.2.x UL multi code reference measurement channel (12.2 kbps)

Parameter	
Information data rate	12.2 kbps
RU's allocated	2 RU
Midamble	512 chips
Interleaving	20 ms
Power control	2 Bit/user
TFCI	16 Bit/user
Inband signalling DCCH	2 kbps
Puncturing level at Code rate 1/3 : DCH / DCCH	5% / 0 %



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25.102 CR 028

Current Version: **3.2.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: **RAN #8**
list expected approval meeting # here ↑

for approval
for information

strategic
non-strategic (for SMG use only)

Form: CR cover sheet, version 2 for 3GPP and SMG The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Form-v2.doc>

Proposed change affects:
(at least one should be marked with an X)

(U)SIM ME UTRAN / Radio Core Network

Source: RAN WG4 **Date:** 09/05/00

Subject: Correction for 25.102 concerning Uplink power control

Work item:

Category: (only one category shall be marked with an X)	F Correction	<input checked="" type="checkbox"/>	Release:	Phase 2	<input type="checkbox"/>
	A Corresponds to a correction in an earlier release	<input type="checkbox"/>		Release 96	<input type="checkbox"/>
	B Addition of feature	<input type="checkbox"/>		Release 97	<input type="checkbox"/>
	C Functional modification of feature	<input type="checkbox"/>		Release 98	<input type="checkbox"/>
	D Editorial modification	<input type="checkbox"/>		Release 99	<input checked="" type="checkbox"/>
				Release 00	<input type="checkbox"/>

Reason for change: In the chapter "6.4.1 Uplink power control" it has to be added that *the output power is defined as the average power of the transmit timeslot, and is measured with a filter that has a Root-Raised Cosine (RRC) filter response with a roll off $\alpha = 0.22$ and a bandwidth equal to the chip rate.*

Clauses affected: 6.4.1

Other specs affected:	Other 3G core specifications	<input type="checkbox"/>	→ List of CRs:	
	Other GSM core specifications	<input type="checkbox"/>	→ List of CRs:	
	MS test specifications	<input type="checkbox"/>	→ List of CRs:	
	BSS test specifications	<input type="checkbox"/>	→ List of CRs:	
	O&M specifications	<input type="checkbox"/>	→ List of CRs:	

Other comments:

6.4 Output power dynamics

Power control is used to limit the interference level.

6.4.1 Uplink power control

Uplink power control is the ability of the UE transmitter to sets its output power in accordance with measured downlink path loss, values determined by higher layer signaling and parameter α as defined in TS 25.224. The output power is defined as the average power of the transmit timeslot, and is measured with a filter that has a Root-Raised Cosine (RRC) filter response with a roll off $\alpha = 0.22$ and a bandwidth equal to the chip rate.

6.4.1.1 Initial Accuracy

The UE power control initial accuracy error shall be less than +/-9dB under normal conditions and +/- 12dB under extreme conditions.

6.4.1.2 Differential accuracy, controlled input

The power control differential accuracy, controlled input, is defined as the error in the UE transmitter power step as a result of a step in SIR_{TARGET} when the parameter $\alpha=0$. The step in SIR_{TARGET} shall be rounded to the closest integer dB value. The error shall not exceed the values in table 6.3.

Table 6.3: Transmitter power step tolerance as a result of control power step

ΔSIR_{TARGET} [dB]	Transmitter power step tolerance [dB]
$\Delta SIR_{TARGET} \leq 1$	± 0.5
$1 < \Delta SIR_{TARGET} \leq 2$	± 1
$2 < \Delta SIR_{TARGET} \leq 3$	± 1.5
$3 < \Delta SIR_{TARGET} \leq 10$	± 2
$10 < \Delta SIR_{TARGET} \leq 20$	± 4
$20 < \Delta SIR_{TARGET} \leq 30$	± 6
$30 < \Delta SIR_{TARGET}$	$\pm 9^{(1)}$

(1) Value is given for normal conditions. For extreme conditions value is ± 12

6.4.1.3 Differential accuracy, measured input

The power control differential accuracy, measured input, is defined as the error in UE transmitter power step change as a result of a step change in path loss L_{PCCPCH} .

The error shall not exceed the sum of the following two errors:

- The power control error, resulting from a change in the path loss (ΔL_{PCCPCH}), the same tolerances as defined in table 6.3 shall apply,
- and the errors in the PCCPCH RSCP measurement as defined in TS 25.123.

Note: This requirement needs not to be tested, because the step accuracy error is tested according to the requirement in section 6.4.1.2 and the PCCPCH RSCP measurement error is tested according to the requirement in 25.123.

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25.102 CR 029

Current Version: **3.2.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: **TSG RAN#8**
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Proposed change affects:
(at least one should be marked with an X)

(U)SIM ME UTRAN / Radio Core Network

Source:

RAN WG4

Date:

2000-05-22

Subject:

Adding performance requirements for Demodulation of BCH in Block STTD mode.

Work item:

Category:

(only one category shall be marked with an X)

F Correction
A Corresponds to a correction in an earlier release
B Addition of feature
C Functional modification of feature
D Editorial modification

Release:

Phase 2
Release 96
Release 97
Release 98
Release 99
Release 00

Reason for change:

The current performance requirements are missing.

Clauses affected:

Other specs affected:

Other 3G core specifications → List of CRs:
Other GSM core specifications → List of CRs:
MS test specifications → List of CRs:
BSS test specifications → List of CRs:
O&M specifications → List of CRs:

Other comments:

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. Minimum requirement

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

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

Parameters	Unit	Test 1
$\frac{PCCPCH_E_c}{I_{or}}$	dB	-3
I	dBm/3.84 MHz	-60
Information Data Rate	Kbps	12.3

Table 8.11: Performance requirements in multipath Case 1 channel.

Test Number	$\frac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	<u>8.4</u>	$\{10^{-2}\}$

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25.102 CR 030

Current Version: **3.2.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: **RAN #8**
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strategic
non-strategic (for SMG use only)

Form: CR cover sheet, version 2 for 3GPP and SMG The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Form-v2.doc>

Proposed change affects:
(at least one should be marked with an X)

(U)SIM ME UTRAN / Radio Core Network

Source: RAN WG4 **Date:** 05/05/00

Subject: Modification to the handling of UE TDD Measurement Uncertainty

Work item:

Category:
(only one category shall be marked with an X)

F Correction
A Corresponds to a correction in an earlier release
B Addition of feature
C Functional modification of feature
D Editorial modification

Release: Phase 2
Release 96
Release 97
Release 98
Release 99
Release 00

Reason for change:

The directions of handling for measurement uncertainty shall be changed to clarify its meaning.

Clauses affected: 4.1

Other specs affected:

Other 3G core specifications → List of CRs:
Other GSM core specifications → List of CRs:
MS test specifications → List of CRs:
BSS test specifications → List of CRs:
O&M specifications → List of CRs:

Other comments:

3.3 Abbreviations

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

ACIR	Adjacent Channel Interference Ratio
ACLR	Adjacent Channel Leakage power Ratio
ACS	Adjacent Channel Selectivity
BS	Base Station
CW	Continuous wave (unmodulated signal)
DL	Down link (forward link)
DPCH	Dedicated physical channel
DPCH_Ec	Average energy per PN chip for DPCH
$\frac{DPCH_Ec}{I_{or}}$	The ratio of the average energy per PN chip of the DPCH to the total transmit power spectral density of the downlink at the BS antenna connector
$\frac{\Sigma DPCH_Ec}{I_{or}}$	The ratio of the sum of DPCH_Ec for one service in case of multicode to the total transmit power spectral density of the downlink at the BS antenna connector
EIRP	Effective Isotropic Radiated Power
FDD	Frequency Division Duplexing
FER	Frame Error Ratio
Fuw	Frequency of unwanted signal. This is specified in bracket in terms of an absolute frequency(s) or frequency offset from the assigned channel frequency.
Ioc	The power spectral density of a band limited white noise source (simulating interference from other cells) as measured at the UE antenna connector.
Ior	The total transmit power spectral density of the downlink at the BS antenna connector
\hat{I}_{or}	The received power spectral density of the downlink as measured at the UE antenna connector
PPM	Parts Per Million
RSSI	Received Signal Strength Indicator
SIR	Signal to Interference ratio
TDD	Time Division Duplexing
TPC	Transmit Power Control
UE	User Equipment
UL	Up link (reverse link)
UTRA	UMTS Terrestrial Radio Access

4 General

4.1 Measurement uncertainty

~~The requirements given in these specifications are absolute. Compliance with these requirements are determined by comparing the measured values with the specified limits, without making allowance for measurement uncertainty.~~

The requirements given in the present document make no allowance for measurement uncertainty. Where the measurement uncertainty can be determined, the test limit shall be relaxed from the value given in the present document. See Annex F of 34.122. Where the measurement uncertainty cannot reasonably be determined, the "Shared Risk" principle is applied, i.e. the test limit is not relaxed.

The Shared Risk principle is defined in ETR 028.

CHANGE REQUEST

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25.102 CR 031

Current Version: **3.2.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: **RAN#12**
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Proposed change affects:

(at least one should be marked with an X)

(U)SIM ME UTRAN / Radio Core Network

Source:

RAN WG4

Date:

23.05.2000

Subject:

Clarification of the specification on Peak Code Domain Error (PCDE)

Work item:

TS 25.102

Category:

(only one category shall be marked with an X)

F Correction
A Corresponds to a correction in an earlier release
B Addition of feature
C Functional modification of feature
D Editorial modification

Release:

Phase 2
Release 96
Release 97
Release 98
Release 99
Release 00

Reason for change:

The PCDE is strongly dependent on the spreading factor (SF); therefore, it is needed to clearly specify at which SF the PCDE is evaluated.

Clauses affected:

Other specs affected:

Other 3G core specifications → List of CRs:
Other GSM core specifications → List of CRs:
MS test specifications → List of CRs:
BSS test specifications → List of CRs:
O&M specifications → List of CRs:

Other comments:

6.8.3 Peak Code Domain Error

This specification is applicable for multi-code transmission only.

The code domain error is computed by projecting the error vector power onto the code domain at ~~a specific~~
~~maximum~~ spreading factor. The error power for each code is defined as the ratio to the mean power of the reference waveform expressed in dB. And the Peak Code Domain Error is defined as the maximum value for Code Domain Error. The measurement interval is one timeslot.

6.8.3.1 Minimum Requirement

The peak code domain error shall not exceed -21 dB at spreading factor 16 for the parameters specified in Table 6.9.