

**3rd Generation Partnership Project;  
Technical Specification Group Radio Access Network;  
Typical examples of RABs and RBs supported by UTRA  
(Release 6)**



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# Contents

Foreword.....	4
1 Scope .....	<b>Error! Bookmark not defined.</b>
2 References .....	<b>Error! Bookmark not defined.</b>
3 QoS Architecture and RAB attributes .....	<b>Error! Bookmark not defined.</b>
4 List of RABs.....	5
5 Combinations of RABs.....	6
6 Examples of Radio Bearers and Signalling Radio Bearers for FDD.....	7
6.1 Combinations on DPCH .....	7
6 Examples of Radio Bearers and Signalling Radio Bearers for TDD.....	<b>Error! Bookmark not defined.</b>
6.1 Combinations on DPCH .....	<b>Error! Bookmark not defined.</b>
6.1.1.3. UE capability .....	<b>Error! Bookmark not defined.</b>
7 Examples of Radio Bearers and signalling Radio Bearers for TDD .....	<b>Error! Bookmark not defined.</b>
<b>Annex X: Change history .....</b>	<b>Error! Bookmark not defined.</b>

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## Foreword

This Technical Report (TR) has been produced by the 3<sup>rd</sup> Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

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  - 2 presented to TSG for approval;
  - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

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**\*\*\*MODIFIED SECTIONS\*\*\***

## 4 List of RABs

The following table provides examples of RABs and signalling RBs which will be considered in the following clauses. The data rate given for each RAB is the maximum data rate that can be supported by that RAB.

**Table XX: Examples of RABs.**

#	Traffic class [15]	SSD [15]	Max. rate, kbps	CS/PS
1	Conversational	Speech	UL:12.2 DL:12.2	CS
2	Conversational	Speech	UL:10.2 DL:10.2	CS
3	Conversational	Speech	UL:7.95 DL:7.95	CS
4	Conversational	Speech	UL:7.4 DL:7.4	CS
5	Conversational	Speech	UL:6.7 DL:6.7	CS
6	Conversational	Speech	UL:5.9 DL:5.9	CS
7	Conversational	Speech	UL:5.15 DL:5.15	CS
8	Conversational	Speech	UL:4.75 DL:4.75	CS
9	Conversational	Unknown	UL:28.8 DL:28.8	CS
10	Conversational	Unknown	UL:64 DL:64	CS
11	Conversational	Unknown	UL:32 DL:32	CS
<a href="#">11a</a>	<a href="#">Conversational</a>	<a href="#">Unknown</a>	<a href="#">UL:8 DL:8</a>	<a href="#">PS</a>
<a href="#">11b</a>	<a href="#">Conversational</a>	<a href="#">Unknown</a>	<a href="#">UL:16 DL:16</a>	<a href="#">PS</a>
12	Streaming	Unknown	UL:14.4 DL:14.4	CS
13	Streaming	Unknown	UL:28.8 DL:28.8	CS
14	Streaming	Unknown	UL:57.6 DL:57.6	CS
15	Streaming	Unknown	UL:0 DL:64	CS
16	Streaming	Unknown	UL:64 DL:0	CS
<a href="#">16a</a>	<a href="#">Streaming</a>	<a href="#">Unknown</a>	<a href="#">UL:8 DL:16</a>	<a href="#">PS</a>
<a href="#">16b</a>	<a href="#">Streaming</a>	<a href="#">Unknown</a>	<a href="#">UL:8 DL:32</a>	<a href="#">PS</a>
<a href="#">16c</a>	<a href="#">Streaming</a>	<a href="#">Unknown</a>	<a href="#">UL:16 DL:64</a>	<a href="#">PS</a>
<a href="#">16d</a>	<a href="#">Streaming</a>	<a href="#">Unknown</a>	<a href="#">UL:32 DL:256</a>	<a href="#">PS</a>
<a href="#">17</a>	<a href="#">Void</a>			
<a href="#">17a</a>	<a href="#">Streaming</a>	<a href="#">Unknown</a>	<a href="#">UL:16 DL:128</a>	<a href="#">PS</a>
<a href="#">18</a>	<a href="#">Void</a>			
<a href="#">19</a>	<a href="#">Void</a>			
20	Interactive or Background	N/A	UL:32 DL:8	PS
20a	Interactive or Background	N/A	UL:8 DL:8	PS
20b	Interactive or Background	N/A	UL:16 DL:16	PS
20c	Interactive or Background	N/A	UL:32 DL:32	PS
21	Interactive or Background	N/A	UL:64 DL:8	PS
22	Interactive or Background	N/A	UL:32 DL:64	PS
23	Interactive or Background	N/A	UL:64 DL:64	PS
24	Interactive or Background	N/A	UL:64 DL:128	PS
25	Interactive or Background	N/A	UL:128 DL:128	PS
26	Interactive or Background	N/A	UL:64 DL:384	PS
27	Interactive or Background	N/A	UL:128 DL:384	PS
28	Interactive or Background	N/A	UL:384 DL:384	PS
29	Interactive or Background	N/A	UL:64 DL:2048	PS
30	Interactive or Background	N/A	UL:128 DL:2048	PS
31	Interactive or Background	N/A	UL:384 DL:2048	PS
32	Interactive or Background	N/A	UL:64 DL:256	PS
33	Interactive or Background	N/A	UL:0 DL:32	PS
34	Interactive or Background	N/A	UL:32 DL: 0	PS
<a href="#">34a</a>	<a href="#">Interactive or Background</a>	<a href="#">N/A</a>	<a href="#">UL:0 DL:0</a>	<a href="#">PS</a>
35	Interactive or Background	N/A	UL:64 DL:144	PS
36	Interactive or Background	N/A	UL:144 DL:144	PS
<a href="#">37</a>	<a href="#">Interactive or background</a>	<a href="#">N/A</a>	<a href="#">UL:128 DL:32</a>	<a href="#">PS</a>

## 5 Combinations of RABs

The present document contains examples of Radio configuration for following combinations of RABs.

NOTE: It is understood that for speech service the AMR mode may be operated asymmetrically for the uplink and downlink.

List of RAB combinations:

59) Streaming / unknown / UL:16 DL:128 kbps / PS RAB  
+ Interactive or background / UL:8 DL:8 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.

60) Conversational / unknown / UL:8 DL:8 kbps / PS RAB  
+ Interactive or Background / UL:8 DL:8 kbps / PS RAB +  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH

Note: Conversational / unknown / UL:8 DL:8 kbps / PS RAB – TF0 contains zero Transport Blocks

61) Conversational / unknown / UL:8 DL:8 kbps / PS RAB  
+ Interactive or Background / UL:8 DL:8 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH

Note: Conversational / unknown / UL:8 DL:8 kbps / PS RAB – TF0 contains one Transport Block of zero size

62) Conversational / unknown / UL:16 DL:16 kbps / PS RAB +  
Interactive or Background / UL:8 DL:8 kbps / PS RAB +  
UL:3.4 DL:3.4 kbps SRBs for DCCH

Note: Conversational / unknown / UL:16 DL:16 kbps / PS RAB – TF0 contains zero Transport Blocks

63) Conversational / unknown / UL:16 DL:16 kbps / PS RAB +  
Interactive or Background / UL:8 DL:8 kbps / PS RAB +  
UL:3.4 DL:3.4 kbps SRBs for DCCH

Note: Conversational / unknown / UL:16 DL:16 kbps / PS RAB – TF0 contains one Transport Block of zero size

64) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB  
+ Interactive or Background / UL:0 DL:0 kbps / PS RAB  
+ Interactive or Background / UL:0 DL:0 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH

65) Conversational / unknown / UL:64 DL:64 kbps / CS RAB  
+ Interactive or Background / UL:8 DL:8 kbps / PS RAB  
+ Interactive or Background / UL:8 DL:8 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH

66) Streaming / unknown / UL:8 DL:16 kbps / PS RAB  
+ Interactive or Background / UL:8 DL:8 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH

67) Streaming / unknown / UL:8 DL:32 kbps / PS RAB +  
Interactive or Background / UL:8 DL:8 kbps / PS RAB +  
UL:3.4 DL:3.4 kbps SRBs for DCCH

68) Streaming / unknown / UL:32 DL:256 kbps / PS RAB +  
Interactive or Background / UL:8 DL:8 kbps / PS RAB +  
UL:3.4 DL:3.4 kbps SRBs for DCCH

69) Interactive or background / UL:16 DL:16 kbps / PS RAB +  
Interactive or Background / UL:16 DL:16 kbps / PS RAB +  
UL:3.4 DL:3.4 kbps SRBs for DCCH

- [70\) Interactive or background / UL:64 DL:8 kbps / PS RAB + Interactive or Background / UL:64 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH](#)
- [71\) Interactive or Background / UL:64 DL:128 kbps / PS RAB + Interactive or Background / UL:64 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH](#)
- [72\) Interactive or Background / UL:64 DL:384 kbps / PS RAB + Interactive or Background / UL:64 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH](#)
- [73\) Interactive or background / UL:128 DL:128 kbps / PS RAB + Interactive or Background / UL:128 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH](#)
- [74\) Interactive or background / UL:128 DL:32 kbps / PS RAB + Interactive or Background / UL:128 DL:32 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH](#)

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## 6 Examples of Radio Bearers and Signalling Radio Bearers for FDD

### 6.1 Combinations on DPCH

[\[... New Text.....\]](#)

[6.1.59 Streaming / unknown / UL:16 DL:128 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH](#)

[The minimum UE classes supporting this combination are, UL: 32kbps plus support for turbo coding, DL: 128kbps. This is supported in release 99.](#)

[6.1.59.1 Uplink](#)

[6.1.59.1.1 Transport channel parameters](#)

[6.1.59.1.1.1 Transport channel parameters for Streaming / unknown / UL:16 kbps / PS RAB](#)

[See clause 6.10.2.4.1.58.1.1.1 of \[1\]](#)

[6.1.59.1.1.2 Transport channel parameters for Interactive or background / UL:8 kbps / PS RAB](#)

[See clause 6.10.2.4.1.38b.1.1.1 of \[1\].](#)

[6.1.59.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH](#)

[See clause 6.10.2.4.1.2.1.1.1 of \[1\].](#)

[6.1.59.1.1.4 TFCS](#)

[See clause 6.10.2.4.1.58.1.1.4 of \[1\].](#)

[6.1.59.1.2 Physical channel parameters](#)

[See clause 6.10.2.4.1.58.1.2 of \[1\].](#)



## 6.1.59.2 Downlink

### 6.1.59.2.1 Transport channel parameters

#### 6.1.59.2.1.1 Transport channel parameters for Streaming / unknown / DL:128 kbps / PS RAB

Higher Layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	640	
	Max data rate, bps	128000	
	AM PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	656	
	TFS	TF0, bits	0x656
		TF1, bits	1x656
		TF2, bits	2x656
		TF3, bits	4x656
	TTI, ms	20	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	8076	
RM attribute	125-165		

#### 6.1.59.2.1.2 Transport channel parameters for Interactive or background / DL:8 kbps / PS RAB

See clause 6.10.2.4.1.38b.2.1.1 of [1].

#### 6.1.59.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See clause 6.10.2.4.1.2.2.1.1 of [1].

#### 6.1.59.2.1.4 TFCS

TFCS size	16
TFCS	(128 kbps RAB, 8 kbps RAB, DCCH)= (TF0,TF0,TF0), (TF1,TF0,TF0), (TF2,TF0,TF0), (TF3,TF0,TF0) (TF0,TF1,TF0), (TF1,TF1,TF0), (TF2,TF1,TF0), (TF3,TF1,TF0) (TF0,TF0,TF1), (TF1,TF0,TF1), (TF2,TF0,TF1), (TF3,TF0,TF1) (TF0,TF1,TF1), (TF1,TF1,TF1), (TF2,TF1,TF1), (TF3,TF1,TF1)

### 6.1.59.2.2 Physical channel parameters

DPCH Downlink	DTX position	Flexible	
	Spreading factor	16	
	DPCCH	Number of TFCl bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	288
Number of data bits/frame		4320	

### 6.1.60 Conversational / unknown / UL:8 DL:8 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

Note: Conversational / unknown / UL:8 kbps / PS RAB – TF0 contains zero Transport Blocks

[Note: Conversational / unknown / DL:8 kbps / PS RAB – TF0 contains zero Transport Blocks](#)

[The minimum UE classes supporting this combination are, UL: 32kbps plus support for turbo coding, DL: 32kbps plus support for turbo coding. This is supported in release 99.](#)

#### [6.1.60.1 Uplink](#)

##### [6.1.60.1.1 Transport channel parameters](#)

###### [6.1.60.1.1.1 Transport channel parameters for Conversational / unknown / UL:8 kbps / PS RAB](#)

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	320	
	Max data rate, bps	8000	
	UMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	328	
	TFS	TF0, bits	0x328
		TF1, bits	1x328
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	1044	
	Uplink: Max number of bits/radio frame before rate matching	261	
	RM attribute	135-175	

###### [6.1.60.1.1.2 Transport channel parameters for Interactive or Background / UL:8 kbps / PS RAB](#)

[See clause 6.10.2.4.1.38b.1.1.2 of \[1\]](#)

###### [6.1.60.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH](#)

[See clause 6.10.2.4.1.2.1.1.1 of \[1\]](#)

###### [6.1.60.1.1.4 TFCS](#)

TFCS size	8
TFCS	(8 kbps Conversational RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF0, TF1, TF0), (TF1, TF1, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1)

###### [6.1.60.1.2 Physical channel parameters](#)

DPCH Uplink	Min spreading factor	32
	Max number of DPDCH data bits/radio frame	1200
	Puncturing Limit	1.0

## 6.1.60.2 Downlink

### 6.1.60.2.1 Transport channel parameters

#### 6.1.60.2.1.1 Transport channel parameters for Conversational / unknown / DL:8 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	320	
	Max data rate, bps	8000	
	AMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	328	
	TFS	TF0, bits	0x328
		TF1, bits	1x328
	TTL, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	1044	
	RM attribute	135-175	

#### 6.1.60.2.1.2 Transport channel parameters for Interactive or Background / DL:8 kbps / PS RAB

See clause 6.10.2.4.1.38b.2.1.2 of [1].

#### 6.1.60.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See clause 6.10.2.4.1.2.2.1.1 of [1]

#### 6.1.60.2.1.4 TFCS

TFCS size	8
TFCS	(8 kbps Conversational RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF0, TF1, TF0), (TF1, TF1, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1)

### 6.1.60.2.2 Physical channel parameters

DPCH Downlink	DTX position	Flexible	
	Spreading factor	64	
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	60
		Number of data bits/frame	900

## 6.1.61 Conversational / unknown / UL:8 DL:8 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

Note: Conversational / unknown / UL:8 kbps / PS RAB – TF0 contains one Transport Block of zero size

Note: Conversational / unknown / DL:8 kbps / PS RAB – TF0 contains one Transport Block of zero size

The minimum UE classes supporting this combination are, UL: 32kbps plus support for turbo coding, DL: 32kbps plus support for turbo coding. This is supported in release 99.

### 6.1.61.1 Uplink

#### 6.1.61.1.1 Transport channel parameters

##### 6.1.61.1.1.1 Transport channel parameters for Conversational / unknown / UL:8 kbps / PS RAB

NOTE: In case of using this alternative, CRC parity bits are to be attached every time since number of TrBlks are 1 even if there is no data on the RAB (see clause 4.2.1.1 in TS 25.212).

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	320	
	Max data rate, bps	8000	
	UMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	0, 328	
	TFS	TF0, bits	1x0
		TF1, bits	1x328
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	1044	
	Uplink: Max number of bits/radio frame before rate matching	261	
RM attribute	135-175		

##### 6.1.61.1.1.2 Transport channel parameters for Interactive or Background / UL:8 kbps / PS RAB

See clause 6.10.2.4.1.38b.1.1.2 of [1]

##### 6.1.61.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See clause 6.10.2.4.1.2.1.1.1 of [1]

##### 6.1.61.1.1.4 TFCS

TFCS size	8
TFCS	(8 kbps Conversational RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF0, TF1, TF0), (TF1, TF1, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1)

##### 6.1.61.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	32
	Max number of DPDCH data bits/radio frame	1200
	Puncturing Limit	1.0

### 6.1.61.2 Downlink

#### 6.1.61.2.1 Transport channel parameters

##### 6.1.61.2.1.1 Transport channel parameters for Conversational / unknown / DL:8 kbps / PS RAB

NOTE: In case of using this alternative, CRC parity bits are to be attached every time since number of TrBlks are 1 even if there is no data on the RAB (see clause 4.2.1.1 in TS 25.212).

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	320	
	Max data rate, bps	8000	
	AMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	0, 328	
	TFS	TF0, bits	1x0
		TF1, bits	1x328
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	1044	
	RM attribute	135-175	

##### 6.1.61.2.1.2 Transport channel parameters for Interactive or Background / DL:8 kbps / PS RAB

See clause 6.10.2.4.1.38b.2.1.2 of [1].

##### 6.1.61.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See clause 6.10.2.4.1.2.2.1.1 of [1]

##### 6.1.61.2.1.4 TFCS

TFCS size	8
TFCS	(8 kbps Conversational RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF0, TF1, TF0), (TF1, TF1, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1)

#### 6.1.61.2.2 Physical channel parameters

DPCH Downlink	DTX position	Flexible	
	Spreading factor	64	
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	60
		Number of data bits/frame	900

6.1.62 Conversational / unknown / UL:16 DL:16 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

Note: Conversational / unknown / UL:16 kbps / PS RAB – TF0 contains zero Transport Blocks

Note: Conversational / unknown / DL:16 kbps / PS RAB – TF0 contains zero Transport Blocks

The minimum UE classes supporting this combination are, UL: 32kbps plus support for turbo coding, DL: 32kbps plus support for turbo coding. This is supported in release 99.

6.1.62.1 Uplink

6.1.62.1.1 Transport channel parameters

6.1.62.1.1.1 Transport channel parameters for Conversational / unknown / UL:16 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	320	
	Max data rate, bps	16000	
	UMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	328	
	TFS	TF0, bits	0x328
		TF1, bits	1x328
		TF2, bits	2x328
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	2076	
	Uplink: Max number of bits/radio frame before rate matching	519	
RM attribute	135-175		

6.1.62.1.1.2 Transport channel parameters for Interactive or Background / UL:8 kbps / PS RAB

See clause 6.10.2.4.1.38b.1.1.2 of [1]

6.1.62.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See clause 6.10.2.4.1.2.1.1.1 of [1]

6.1.62.1.1.4 TFCS

TFCS size	12
TFCS	(16 kbps Conversational RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1), (TF2, TF0, TF0), (TF2, TF1, TF0), (TF2, TF0, TF1), (TF2, TF1, TF1)

### 6.1.62.1.2 Physical channel parameters

DPOCH Uplink	Min spreading factor	32
	Max number of DPDCH data bits/radio frame	1200
	Puncturing Limit	1.0

### 6.1.62.2 Downlink

#### 6.1.62.2.1 Transport channel parameters

##### 6.1.62.2.1.1 Transport channel parameters for Conversational / unknown / DL:16 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	320	
	Max data rate, bps	16000	
	AMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	328	
	TFS	TF0, bits	0x328
		TF1, bits	1x328
		TF2, bits	2x328
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	2076	
	RM attribute	135-175	

##### 6.1.62.2.1.2 Transport channel parameters for Interactive or Background / DL:8 kbps / PS RAB

See clause 6.10.2.4.1, 38b.2.1.2 of [1]

##### 6.1.62.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See clause 6.10.2.4.1.2.2.1.1 of [1]

#### 6.1.62.2.1.4 TFCS

<u>TFCS size</u>	12
<u>TFCS</u>	(16 kbps Conversational RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1), (TF2, TF0, TF0), (TF2, TF1, TF0), (TF2, TF0, TF1), (TF2, TF1, TF1)

#### 6.1.62.2.2 Physical channel parameters

<u>DPCH</u>	<u>DTX position</u>	<u>Flexible</u>
<u>Downlink</u>	<u>Spreading factor</u>	<u>64</u>
	<u>DPCCH</u>	
	<u>Number of TFCI bits/slot</u>	<u>8</u>
	<u>Number of TPC bits/slot</u>	<u>4</u>
	<u>Number of Pilot bits/slot</u>	<u>8</u>
	<u>DPDCH</u>	
	<u>Number of data bits/slot</u>	<u>60</u>
	<u>Number of data bits/frame</u>	<u>900</u>

#### 6.1.63 Conversational / unknown / UL:16 DL:16 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

Note: Conversational / unknown / UL:16 kbps / PS RAB – TF0 contains one Transport Block of zero size

Note: Conversational / unknown / DL:16 kbps / PS RAB – TF0 contains one Transport Block of zero size

The minimum UE classes supporting this combination are, UL: 32kbps plus support for turbo coding, DL: 32kbps plus support for turbo coding. This is supported in release 99.



[6.1.63.1 Uplink](#)[6.1.63.1.1 Transport channel parameters](#)[6.1.63.1.1.1 Transport channel parameters for Conversational / unknown / UL:16 kbps / PS RAB](#)

NOTE: In case of using this alternative, CRC parity bits are to be attached every time since number of TrBlks are 1 even if there is no data on the RAB (see clause 4.2.1.1 in TS 25.212).

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	UM	
	Payload sizes, bit	320	
	Max data rate, bps	16000	
	UMD PDU header, bit	8	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	0, 328	
	TFS	TF0, bits	1x0
		TF1, bits	1x328
		TF2, bits	2x328
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	2076	
	Uplink: Max number of bits/radio frame before rate matching	519	
RM attribute	135-175		

[6.1.63.1.1.2 Transport channel parameters for Interactive or Background / UL:8 kbps / PS RAB](#)

See clause 6.10.2.4.1.38b.1.1.2 of [1]

[6.1.63.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH](#)

See clause 6.10.2.4.1.2.1.1.1 of [1]

[6.1.63.1.1.4 TFCS](#)

TFCS size	12
TFCS	(16 kbps Conversational RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1), (TF2, TF0, TF0), (TF2, TF1, TF0), (TF2, TF0, TF1), (TF2, TF1, TF1)

[6.1.63.1.2 Physical channel parameters](#)

DPCH Uplink	Min spreading factor	32
	Max number of DPDCH data bits/radio frame	1200
	Puncturing Limit	1.0

[6.1.63.2 Downlink](#)[6.1.63.2.1 Transport channel parameters](#)[6.1.63.2.1.1 Transport channel parameters for Conversational / unknown / DL:16 kbps / PS RAB](#)

**NOTE:** In case of using this alternative, CRC parity bits are to be attached every time since number of TrBlks are 1 even if there is no data on the RAB (see clause 4.2.1.1 in TS 25.212).

<a href="#">Higher layer</a>	<a href="#">RAB/Signalling RB</a>	<a href="#">RAB</a>	
<a href="#">RLC</a>	<a href="#">Logical channel type</a>	<a href="#">DTCH</a>	
	<a href="#">RLC mode</a>	<a href="#">UM</a>	
	<a href="#">Payload sizes, bit</a>	<a href="#">320</a>	
	<a href="#">Max data rate, bps</a>	<a href="#">16000</a>	
	<a href="#">AMD PDU header, bit</a>	<a href="#">8</a>	
<a href="#">MAC</a>	<a href="#">MAC header, bit</a>	<a href="#">0</a>	
	<a href="#">MAC multiplexing</a>	<a href="#">N/A</a>	
<a href="#">Layer 1</a>	<a href="#">TrCH type</a>	<a href="#">DCH</a>	
	<a href="#">TB sizes, bit</a>	<a href="#">0, 328</a>	
	<a href="#">TFS</a>	<a href="#">TF0, bits</a>	<a href="#">1x0</a>
		<a href="#">TF1, bits</a>	<a href="#">1x328</a>
		<a href="#">TF2, bits</a>	<a href="#">2x328</a>
	<a href="#">TTI, ms</a>	<a href="#">40</a>	
	<a href="#">Coding type</a>	<a href="#">TC</a>	
	<a href="#">CRC, bit</a>	<a href="#">16</a>	
	<a href="#">Max number of bits/TTI after channel coding</a>	<a href="#">2076</a>	
<a href="#">RM attribute</a>	<a href="#">135-175</a>		

[6.1.63.2.1.2 Transport channel parameters for Interactive or Background / DL:8 kbps / PS RAB](#)

See clause 6.10.2.4.1. 38b.2.1.2 of [1]

[6.1.63.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH](#)

See clause 6.10.2.4.1.2.2.1.1 of [1]

[6.1.63.2.1.4 TFCS](#)

<a href="#">TFCS size</a>	<a href="#">12</a>
<a href="#">TFCS</a>	<a href="#">(16 kbps Conversational RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1), (TF2, TF0, TF0), (TF2, TF1, TF0), (TF2, TF0, TF1), (TF2, TF1, TF1)</a>

[6.1.63.2.2 Physical channel parameters](#)

<a href="#">DPCH Downlink</a>	<a href="#">DTX position</a>	<a href="#">Flexible</a>	
	<a href="#">Spreading factor</a>	<a href="#">64</a>	
	<a href="#">DPCCH</a>	<a href="#">Number of TFCI bits/slot</a>	<a href="#">8</a>
		<a href="#">Number of TPC bits/slot</a>	<a href="#">4</a>
		<a href="#">Number of Pilot bits/slot</a>	<a href="#">8</a>
	<a href="#">DPDCH</a>	<a href="#">Number of data bits/slot</a>	<a href="#">60</a>
		<a href="#">Number of data bits/frame</a>	<a href="#">900</a>

[6.1.64](#) [Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or Background / UL:0 DL:0 kbps / PS RAB + Interactive or Background / UL:0 DL:0 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH](#)

[The minimum UE classes supporting this combination are, UL: 64kbps, DL: 128kbps. This is supported in release 99.](#)

[6.1.64.1](#) [Uplink](#)

[6.1.64.1.1](#) [Transport channel parameters](#)

[6.1.64.1.1.1](#) [Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB](#)

[See clause 6.10.2.4.1.4.1.1.1 of \[1\].](#)

[6.1.64.1.1.2](#) [Transport channel parameters for Interactive or Background / UL:0 + UL:0 kbps / PS RAB](#)

Higher layer	RAB/Signalling RB	RAB	RAB
RLC	Logical channel type	DTCH	DTCH
	RLC mode	AM	AM
	Payload sizes, bit	320	320
	Max data rate, bps	0	0
	AMD PDU header, bit	16	16
MAC	MAC header, bit	4	4
	MAC multiplexing	2 logical channel multiplexing	
Layer 1	TrCH type	DCH	
	TB sizes, bit	340	
	TFS	TF0, bits	
	TTI, ms	20	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	0	
	Uplink: Max number of bits/radio frame before rate matching	0	
	RM attribute	130-170	

[6.1.64.1.1.3](#) [Transport channel parameters for UL:3.4 kbps SRBs for DCCH](#)

[See clause 6.10.2.4.1.2.1.1.1 of \[1\].](#)

[6.1.64.1.1.4](#) [TFCS](#)

TFCS size	6
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 0+0kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF1,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF1,TF0,TF1)

[6.1.64.1.2](#) [Physical channel parameters](#)

DPCH Uplink	Min spreading factor	64
	Max number of DPDCH data bits/radio frame	600
	Puncturing Limit	0.84

### 6.1.64.2 Downlink

#### 6.1.64.2.1 Transport channel parameters

##### 6.1.64.2.1.1 Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See clause 6.10.2.4.1.4.2.1.1 of [1].

##### 6.1.64.2.1.2 Transport channel parameters for Interactive or Background / DL:0 + DL:0 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	RAB
RLC	Logical channel type	DTCH	DTCH
	RLC mode	AM	AM
	Payload sizes, bit	320	320
	Max data rate, bps	0	0
	AMD PDU header, bit	16	16
MAC	MAC header, bit	4	4
	MAC multiplexing	2 logical channel multiplexing	
Layer 1	TrCH type	DCH	
	TB sizes, bit	340	
	TFS	TF0, bits	
	TFS	0x340	
	TTL, ms	20	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTL after channel coding	0	
RM attribute	130-170		

##### 6.1.64.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See clause 6.10.2.4.1.2.2.1.1 of [1].

##### 6.1.64.2.1.4 TFCS

TFCS size	6
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 0+0kbps RAB, DCCH)= (TF0,TF0,TF0,TF0,TF0), (TF1,TF0,TF0,TF0,TF0), (TF2,TF1,TF1,TF0,TF0), (TF0,TF0,TF0,TF0,TF1), (TF1,TF0,TF0,TF0,TF1), (TF2,TF1,TF1,TF0,TF1)

#### 6.1.64.2.2 Physical channel parameters

DPCH Downlink	DTX position	Flexible
	Spreading factor	128
DPCCH	Number of TFCI bits/slot	0
	Number of TPC bits/slot	2
	Number of Pilot bits/slot	4
DPDCH	Number of data bits/slot	34
	Number of data bits/frame	510

#### 6.1.65 Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are, UL: 64kbps, DL: 128kbps. This is supported in release 99.

[6.1.65.1 Uplink](#)[6.1.65.1.1 Transport channel parameters](#)[6.1.65.1.1.1 Transport channel parameters for Conversational / unknown / UL:64 kbps / CS RAB](#)[See clause 6.10.2.4.1.13.1.1.1 of \[1\].](#)[6.1.65.1.1.2 Transport channel parameters for Interactive or Background / UL:8 + UL:8 kbps / PS RAB](#)[See clause 6.10.2.4.1.56.1.1.1 of \[1\].](#)[6.1.65.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH](#)[See clause 6.10.2.4.1.2.1.1.1 of \[1\].](#)[6.1.65.1.1.4 TFCS](#)

TFCS size	8
TFCS	(64 kbps Conversational RAB, 8+8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1)

[6.1.65.1.2 Physical channel parameters](#)

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	0.72

[6.1.65.2 Downlink](#)[6.1.65.2.1 Transport channel parameters](#)[6.1.65.2.1.1 Transport channel parameters for Conversational / unknown / DL:64 kbps / CS RAB](#)[See clause 6.10.2.4.1.13.2.1.1 of \[1\].](#)[6.1.65.2.1.2 Transport channel parameters for Interactive or Background / DL:8 + DL:8 kbps / PS RAB](#)[See clause 6.10.2.4.1.56.2.1.1 of \[1\].](#)[6.1.65.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH](#)[See clause 6.10.2.4.1.2.2.1.1 of \[1\].](#)[6.1.65.2.1.4 TFCS](#)

TFCS size	8
TFCS	(64 kbps Conversational RAB, 8+8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1)

### 6.1.65.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible
	Spreading factor		32
DPCCH	Number of TFCI bits/slot		8
	Number of TPC bits/slot		4
	Number of Pilot bits/slot		8
DPDCH	Number of data bits/slot		140
	Number of data bits/frame		2100

### 6.1.66 Streaming / unknown / UL:8 DL:16 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are, UL: 64kbps, DL: 128kbps. This is supported in release 99.

#### 6.1.66.1 Uplink

##### 6.1.66.1.1 Transport channel parameters

##### 6.1.66.1.1.1 Transport channel parameters for Streaming / unknown / UL:8 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	320	
	Max data rate, bps	8000	
	AMD PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	336	
	TFS	TF0, bits	0x336
		TF1, bits	1x336
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	1068	
	Uplink: Max number of bits/radio frame before rate matching	267	
	RM attribute	135-175	

##### 6.1.66.1.1.2 Transport channel parameters for Interactive or Background / UL:8 kbps / PS RAB

See clause 6.10.2.4.1.38b.1.1.2 of [1]

##### 6.1.66.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See clause 6.10.2.4.1.2.1.1.1 of [1]

##### 6.1.66.1.1.4 TFCS

TFCS size	8
TFCS	(8 kbps Streaming RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1)

### 6.1.66.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	32
	Max number of DPDCH data bits/radio frame	1200
	Puncturing Limit	1.0

### 6.1.66.2 Downlink

#### 6.1.66.2.1 Transport channel parameters

##### 6.1.66.2.1.1 Transport channel parameters for Streaming / unknown / DL:16 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	640	
	Max data rate, bps	16000	
	AMD PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	656	
	TFS	TF0, bits	0x656
		TF1, bits	1x656
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	2028	
	RM attribute	125-165	

##### 6.1.66.2.1.2 Transport channel parameters for Interactive or Background / DL:8 kbps / PS RAB

See clause 6.10.2.4.1.38b.2.1.2 of [1]

##### 6.1.66.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See clause 6.10.2.4.1.2.2.1.1 of [1]

##### 6.1.66.2.1.4 TFCS

TFCS size	8
TFCS	(16 kbps Streaming RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1)

### 6.1.66.2.2 Physical channel parameters

DPCH Downlink	DTX position	Flexible	
	Spreading factor	64	
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	60
		Number of data bits/frame	900

[6.1.67](#) [Streaming / unknown / UL:8 DL:32 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH](#)

[The minimum UE classes supporting this combination are, UL: 64kbps, DL: 128kbps. This is supported in release 99.](#)

[6.1.67.1](#) [Uplink](#)

[6.1.67.1.1](#) [Transport channel parameters](#)

[6.1.67.1.1.1](#) [Transport channel parameters for Streaming / unknown / UL:8 kbps / PS RAB](#)

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	320	
	Max data rate, bps	8000	
	AMD PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	336	
	TFS	TF0, bits	0x336
		TF1, bits	1x336
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	1068	
	Uplink: Max number of bits/radio frame before rate matching	267	
	RM attribute	135-175	

[6.1.67.1.1.2](#) [Transport channel parameters for Interactive or Background / UL:8 kbps / PS RAB](#)

[See clause 6.10.2.4.1.38b.1.1.2 of \[1\]](#)

[6.1.67.1.1.3](#) [Transport channel parameters for UL:3.4 kbps SRBs for DCCH](#)

[See clause 6.10.2.4.1.2.1.1.1 of \[1\]](#)

[6.1.67.1.1.4](#) [TFCS](#)

TFCS size	8
TFCS	(8 kbps Streaming RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1)

[6.1.67.1.2](#) [Physical channel parameters](#)

DPCH Uplink	Min spreading factor	32
	Max number of DPDCH data bits/radio frame	1200
	Puncturing Limit	1.0



## 6.1.67.2 Downlink

### 6.1.67.2.1 Transport channel parameters

#### 6.1.67.2.1.1 Transport channel parameters for Streaming / unknown / DL:32 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	640	
	Max data rate, bps	32000	
	AMD PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	656	
	TFS	TF0, bits	0x656
		TF1, bits	1x656
		TF2, bits	2x656
	TTL, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	4044	
	RM attribute	125-165	

#### 6.1.67.2.1.2 Transport channel parameters for Interactive or Background / DL:8 kbps / PS RAB

See clause 6.10.2.4.1, 38b.2.1.2 of [1]

#### 6.1.67.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See clause 6.10.2.4.1.2.2.1.1 of [1]

#### 6.1.67.2.1.4 TFCS

TFCS size	12
TFCS	(32 kbps Streaming RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1), (TF2, TF0, TF0), (TF2, TF1, TF0), (TF2, TF0, TF1), (TF2, TF1, TF1)

### 6.1.67.2.2 Physical channel parameters

DPCH Downlink	DTX position	Flexible
	Spreading factor	32
DPCCH	Number of TFCI bits/slot	8
	Number of TPC bits/slot	4
	Number of Pilot bits/slot	8
DPDCH	Number of data bits/slot	140
	Number of data bits/frame	2100

### 6.1.68 Streaming / unknown / UL:32 DL:256 kbps / PS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are, UL: 64kbps, DL: 384kbps. This is supported in release 99.

[6.1.68.1 Uplink](#)[6.1.68.1.1 Transport channel parameters](#)[6.1.68.1.1.1 Transport channel parameters for Streaming / unknown / UL:32 kbps / PS RAB](#)

<a href="#">Higher layer</a>	<a href="#">RAB/Signalling RB</a>	<a href="#">RAB</a>	
<a href="#">RLC</a>	<a href="#">Logical channel type</a>	<a href="#">DTCH</a>	
	<a href="#">RLC mode</a>	<a href="#">AM</a>	
	<a href="#">Payload sizes, bit</a>	<a href="#">320</a>	
	<a href="#">Max data rate, bps</a>	<a href="#">32000</a>	
	<a href="#">AMD PDU header, bit</a>	<a href="#">16</a>	
<a href="#">MAC</a>	<a href="#">MAC header, bit</a>	<a href="#">0</a>	
	<a href="#">MAC multiplexing</a>	<a href="#">N/A</a>	
<a href="#">Layer 1</a>	<a href="#">TrCH type</a>	<a href="#">DCH</a>	
	<a href="#">TB sizes, bit</a>	<a href="#">336</a>	
	<a href="#">TFS</a>	<a href="#">TF0, bits</a>	<a href="#">0x336</a>
		<a href="#">TF1, bits</a>	<a href="#">1x336</a>
		<a href="#">TF2, bits</a>	<a href="#">2x336</a>
	<a href="#">TTI, ms</a>	<a href="#">20</a>	
	<a href="#">Coding type</a>	<a href="#">TC</a>	
	<a href="#">CRC, bit</a>	<a href="#">16</a>	
	<a href="#">Max number of bits/TTI after channel coding</a>	<a href="#">2124</a>	
	<a href="#">Uplink: Max number of bits/radio frame before rate matching</a>	<a href="#">1062</a>	
<a href="#">RM attribute</a>	<a href="#">135-175</a>		

[6.1.68.1.1.2 Transport channel parameters for Interactive or Background / UL:8 kbps / PS RAB](#)

See clause 6.10.2.4.1.38b.1.1.2 of [1]

[6.1.68.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH](#)

See clause 6.10.2.4.1.2.1.1.1 of [1]

[6.1.68.1.1.4 TFCS](#)

<a href="#">TFCS size</a>	<a href="#">12</a>
<a href="#">TFCS</a>	<a href="#">(32 kbps Streaming RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1), (TF2, TF0, TF0), (TF2, TF1, TF0), (TF2, TF0, TF1), (TF2, TF1, TF1)</a>

[6.1.68.1.2 Physical channel parameters](#)

<a href="#">DPCH Uplink</a>	<a href="#">Min spreading factor</a>	<a href="#">16</a>
	<a href="#">Max number of DPDCH data bits/radio frame</a>	<a href="#">2400</a>
	<a href="#">Puncturing Limit</a>	<a href="#">1.0</a>

[6.1.68.2 Downlink](#)[6.1.68.2.1 Transport channel parameters](#)[6.1.68.2.1.1 Transport channel parameters for Streaming / unknown / DL:256 kbps / PS RAB](#)

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	640	
	Max data rate, bps	256000	
	AMD PDU header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	656	
	TFS	TF0, bits	0x656
		TF1, bits	1x656
		TF2, bits	2x656
		TF3, bits	4x656
	TTI, ms	10	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	8076	
RM attribute	125-165		

[6.1.68.2.1.2 Transport channel parameters for Interactive or Background / DL:8 kbps / PS RAB](#)

See clause 6.10.2.4.1, 38b.2.1.2 of [1]

[6.1.68.2.1.3 Transport channel parameters for DL:3.4 kbps SRBs for DCCH](#)

See clause 6.10.2.4.1.2.2.1.1 of [1]

[6.1.68.2.1.4 TFCS](#)

TFCS size	16
TFCS	(256 kbps Streaming RAB, 8 kbps I/B RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF0, TF1), (TF1, TF1, TF1), (TF2, TF0, TF0), (TF2, TF1, TF0), (TF2, TF0, TF1), (TF2, TF1, TF1), (TF3, TF0, TF0), (TF3, TF1, TF0), (TF3, TF0, TF1), (TF3, TF1, TF1)

### 6.1.68.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible
	Spreading factor		8
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	608
		Number of data bits/frame	9120

### 6.1.69 Interactive or background / UL:16 DL:16 kbps / PS RAB + Interactive or Background / UL:16 DL:16 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are, UL: 64kbps, DL: 128kbps. This is supported in release 99.

#### 6.1.69.1 Uplink

##### 6.1.69.1.1 Transport channel parameters

##### 6.1.69.1.1.1 Transport channel parameters for Interactive or Background / UL:16 + UL:16 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	RAB	
RLC	Logical channel type	DTCH	DTCH	
	RLC mode	AM	AM	
	Payload sizes, bit	320	320	
	Max data rate, bps	16000	16000	
	AMD PDU header, bit	16	16	
MAC	MAC header, bit	4	4	
	MAC multiplexing	2 logical channel multiplexing		
Layer 1	TrCH type	DCH		
	TB sizes, bit	340		
	TFS	TF0, bits	0x340	
		TF1, bits	1x340	
		TF2, bits	2x340	
	TTL, ms	40		
	Coding type	TC		
	CRC, bit	16		
	Max number of bits/TTL after channel coding	2148		
	Uplink: Max number of bits/radio frame before rate matching	537		
RM attribute	135-175			

##### 6.1.69.1.1.2 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See clause 6.10.2.4.1.2.1.1.1 of [1]

##### 6.1.69.1.1.3 TFCS

TFCS size	6
TFCS	(16 kbps RAB + 16 kbps RAB, DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1)

### 6.1.69.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	32
	Max number of DPDCH data bits/radio frame	1200
	Puncturing Limit	1.0

### 6.1.69.2 Downlink

#### 6.1.69.2.1 Transport channel parameters

##### 6.1.69.2.1.1 Transport channel parameters for Interactive or background / DL:16 + DL:16 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	RAB	
RLC	Logical channel type	DTCH	DTCH	
	RLC mode	AM	AM	
	Payload sizes, bit	320	320	
	Max data rate, bps	16000	16000	
	AMD PDU header, bit	16	16	
MAC	MAC header, bit	4	4	
	MAC multiplexing	2 logical channel multiplexing		
Layer 1	TrCH type	DCH		
	TB sizes, bit	340		
	TFS	TF0, bits	0x340	
		TF1, bits	1x340	
		TF2, bits	2x340	
	TTI, ms	40		
	Coding type	TC		
	CRC, bit	16		
	Max number of bits/TTI after channel coding	2148		
RM attribute	135-175			

##### 6.1.69.2.1.2 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See clause 6.10.2.4.1.2.2.1.1 of [1]

##### 6.1.69.2.1.3 TFCS

TFCS size	6
TFCS	$(16 \text{ kbps RAB} + 16 \text{ kbps RAB, DCCH}) = (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1)$

### 6.1.69.2.2 Physical channel parameters

DPCH Downlink	DTX position	Flexible	
	Spreading factor	128	
	DPCCH	Number of TFCI bits/slot	2
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	4
	DPDCH	Number of data bits/slot	32
		Number of data bits/frame	480

### 6.1.70 Interactive or background / UL:64 DL:8 kbps / PS RAB + Interactive or Background / UL:64 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are, UL: 64kbps, DL: 128kbps. This is supported in release 99.

[6.1.70.1 Uplink](#)[See clause 6.10.2.4.1.57.1 of \[1\]](#)[6.1.70.2 Downlink](#)[See clause 6.10.2.4.1.56.2 of \[1\]](#)[6.1.71 Interactive or Background / UL:64 DL:128 kbps / PS RAB + Interactive or Background / UL:64 DL:128 kbps / PS RAB+ UL:3.4 DL:3.4 kbps SRBs for DCCH](#)[The minimum UE classes supporting this combination are, UL: 64kbps, DL: 128kbps. This is supported in release 99.](#)[6.1.71.1 Uplink](#)[See clause 6.10.2.4.1.57.1 of \[1\]](#)[6.1.71.2 Downlink](#)[6.1.71.2.1 Transport channel parameters](#)[6.1.71.2.1.1 Transport channel parameters for Interactive or background / DL:128 + DL:128 kbps / PS RAB](#)

Higher layer	RAB/Signalling RB	RAB	RAB	
RLC	Logical channel type	DTCH	DTCH	
	RLC mode	AM	AM	
	Payload sizes, bit	320	320	
	Max data rate, bps	128000	128000	
	AMD PDU header, bit	16	16	
MAC	MAC header, bit	4	4	
	MAC multiplexing	2 logical channel multiplexing		
Layer 1	TrCH type	DCH		
	TB sizes, bit	340		
	TFS	TF0, bits	0x340	
		TF1, bits	1x340	
		TF2, bits	2x340	
		TF3, bits	4x340	
		TF4, bits	8x340	
	TTI, ms	20		
	Coding type	TC		
	CRC, bit	16		
Max number of bits/TTI after channel coding	8556			
RM attribute	120-160			

[6.1.71.2.1.2 Transport channel parameters for DL:3.4 kbps SRBs for DCCH](#)[See clause 6.10.2.4.1.2.2.1.1 of \[1\].](#)[6.1.71.2.1.3 TFCS](#)

TFCS size	10
TFCS	(128 kbps RAB + 128 kbps RAB, DCCH) = (TF0,TF0), (TF1,TF0), (TF2,TF0), (TF3,TF0), (TF4,TF0), (TF0,TF1), (TF1,TF1), (TF2,TF1), (TF3,TF1), (TF4,TF1)

## 6.1.71.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible
	Spreading factor		16
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	288
Number of data bits/frame		4320	

## 6.1.72 Interactive or Background / UL:64 DL:384 kbps / PS RAB + Interactive or Background / UL:64 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are, UL: 64kbps, DL: 384kbps. This is supported in release 99.

## 6.1.72.1 Uplink

See clause 6.10.2.4.1.57.1 of [1].

## 6.1.72.2 Downlink

## 6.1.72.2.1 Transport channel parameters

## 6.1.72.2.1.1 Transport channel parameters for Interactive or background / DL:384 + DL:384 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	RAB	
RLC	Logical channel type	DTCH	DTCH	
	RLC mode	AM	AM	
	Payload sizes, bit	320	320	
	Max data rate, bps	384000	384000	
	AMD PDU header, bit	16	16	
MAC	MAC header, bit	4	4	
	MAC multiplexing	2 logical channel multiplexing		
Layer 1	TrCH type	DCH		
	TB sizes, bit	340		
	TFS	TF0, bits	0x340	
		TF1, bits	1x340	
		TF2, bits	2x340	
		TF3, bits	4x340	
		TF4, bits	8x340	
	TF5, bits	12x340		
	TTI, ms	10		
	Coding type	TC		
	CRC, bit	16		
Max number of bits/TTI after channel coding	12828			
RM attribute	110-150			

## 6.1.72.2.1.2 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See clause 6.10.2.4.1.2.2.1.1 of [1].

## 6.1.72.2.1.3 TFCS

TFCS size	12
TFCS	(384 kbps RAB + 384 kbps RAB, DCCH) = (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF5, TF0) (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1), (TF5, TF1)

### 6.1.72.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible
	Spreading factor		8
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	608
		Number of data bits/frame	9120

### 6.1.73 Interactive or background / UL:128 DL:128 kbps / PS RAB + Interactive or Background / UL:128 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are, UL: 128kbps, DL: 128kbps. This is supported in release 99.

#### 6.1.73.1 Uplink

##### 6.1.73.1.1 Transport channel parameters

##### 6.1.73.1.1.1 Transport channel parameters for Interactive or Background / UL:128 + UL:128 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	RAB	
RLC	Logical channel type	DTCH	DTCH	
	RLC mode	AM	AM	
	Payload sizes, bit	320	320	
	Max data rate, bps	128000	128000	
	AMD PDU header, bit	16	16	
MAC	MAC header, bit	4	4	
	MAC multiplexing	2 logical channel multiplexing		
Layer 1	TrCH type	DCH		
	TB sizes, bit	340		
	TFS	TF0, bits	0x340	
		TF1, bits	1x340	
		TF2, bits	2x340	
		TF3, bits	4x340	
		TF4, bits	8x340	
	TTL, ms	20		
	Coding type	TC		
	CRC, bit	16		
	Max number of bits/TTI after channel coding	8556		
	Uplink: Max number of bits/radio frame before rate matching	4278		
RM attribute	120-160			

##### 6.1.73.1.1.2 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See clause 6.10.2.4.1.2.1.1.1 of [1]

##### 6.1.73.1.1.3 TFCS

TFCS size	10
TFCS	(128 kbps RAB + 128 kbps RAB, DCCH) = (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1)



## 6.1.73.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	8
	Max number of DPDCH data bits/radio frame	4800
	Puncturing Limit	0.96

## 6.1.73.2 Downlink

## 6.1.73.2.1 Transport channel parameters

## 6.1.73.2.1.1 Transport channel parameters for Interactive or background / DL:128 + DL:128 kbps / PS RAB

Higher layer	RAB/Signalling RB	RAB	RAB	
RLC	Logical channel type	DTCH	DTCH	
	RLC mode	AM	AM	
	Payload sizes, bit	320	320	
	Max data rate, bps	128000	128000	
	AMD PDU header, bit	16	16	
MAC	MAC header, bit	4	4	
	MAC multiplexing	2 logical channel multiplexing		
Layer 1	TrCH type	DCH		
	TB sizes, bit	340		
	TFS	TF0, bits	0x340	
		TF1, bits	1x340	
		TF2, bits	2x340	
		TF3, bits	4x340	
		TF4, bits	8x340	
	TTI, ms	20		
	Coding type	TC		
	CRC, bit	16		
Max number of bits/TTI after channel coding	8556			
RM attribute	120-160			

## 6.1.73.2.1.2 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See clause 6.10.2.4.1.2.2.1.1 of [1].

## 6.1.73.2.1.3 TFCS

TFCS size	10
TFCS	(128 kbps RAB + 128 kbps RAB, DCCH) = (TF0,TF0), (TF1,TF0), (TF2,TF0), (TF3,TF0), (TF4,TF0), (TF0,TF1), (TF1,TF1), (TF2,TF1), (TF3,TF1), (TF4,TF1)

## 6.1.73.2.2 Physical channel parameters

DPCH Downlink	DTX position	Flexible	
	Spreading factor	16	
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	288
		Number of data bits/frame	4320

[6.1.74](#) [Interactive or background / UL:128 DL:32 kbps / PS RAB + Interactive or Background / UL:128 DL:32 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH](#)

[The minimum UE classes supporting this combination are, UL: 128kbps, DL: 32kbps plus support for turbo coding. This is supported in release 99.](#)

[6.1.74.1](#) [Uplink](#)

[See clause 6.1.73.1](#)

[6.1.74.2](#) [Downlink](#)

[6.1.74.2.1](#) [Transport channel parameters](#)

[6.1.74.2.1.1](#) [Transport channel parameters for Interactive or background / DL:32 + DL:32 kbps / PS RAB](#)

Higher layer	RAB/Signalling RB	RAB	RAB	
RLC	Logical channel type	DTCH	DTCH	
	RLC mode	AM	AM	
	Payload sizes, bit	320	320	
	Max data rate, bps	32000	32000	
	AMD PDU header, bit	16	16	
MAC	MAC header, bit	4	4	
	MAC multiplexing	2 logical channel multiplexing		
Layer 1	TrCH type	DCH		
	TB sizes, bit	340		
	TFS	TF0, bits	0x340	
		TF1, bits	1x340	
		TF2, bits	2x340	
		TF3, bits	3x340	
		TF4, bits	4x340	
	TTL, ms	40		
	Coding type	TC		
	CRC, bit	16		
Max number of bits/TTL after channel coding	4284			
RM attribute	135-175			

[6.1.74.2.1.2](#) [Transport channel parameters for DL:3.4 kbps SRBs for DCCH](#)

[See clause 6.10.2.4.1.2.2.1.1 of \[1\]](#)

[6.1.74.2.1.3](#) [TFCS](#)

TFCS size	10
TFCS	(32 kbps RAB + 32 kbps RAB, DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0) (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1)

[6.1.74.2.2](#) [Physical channel parameters](#)

DPCH Downlink	DTX position		Flexible
	Spreading factor		64
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	60
		Number of data bits/frame	900