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Please find attached our document "Typical Radio Parameter Sets" for information. This document is expected to be utilized in 3GPP according to the decision on the input paper entitled "GSMA ISG activity on Typical Radio Parameter sets."

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# **Typical Radio Interface Parameter Sets**

**Version 1.0**

**February 2000**

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## 1. Scope

This document describes the typical parameter sets for layer 1 and 2 configurations that operators use in actual operations to ensure the interoperability for roaming. It has to be noted that these sets of prioritised parameters are not imposing constraints in the standard, nor removing the flexibility which has been included in the standard as a requirement from the operators, nor will the document define specific essential services for roaming in IMT-2000(UTRA FDD) networks. Moreover, the identification of typical parameter sets does not prevent operators to exploit full flexibility in their networks by the use of parameter settings which are not mentioned by the document.

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## 2. Reference

- [1] 3G TS 25.211 Physical Channels and mapping of Transport Channels onto Physical channels (FDD)
- [2] 3G TS 25.212 Multiplexing and Channel Coding (FDD)
- [3] 3G TS 23.107 QoS concept and Architecture
- [4] 3G TS 26.110 Codec for Circuit Switched Multimedia Telephony Service; General Description
- [5] 3G TS 29.007 General requirements on interworking between the Public Land Mobile Network (PLMN) and the Integrated Services Digital Network (ISDN) or Public Switched Telephone Network (PSTN)
- [6] 3G TR 23.910 Circuit Switched Data Bearer Service

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## 3. Abbreviations

AM	Acknowledgement mode
BCCH	Broadcast Control Channel
CBS	Cell Broadcast Service
CC	Convolutional coding
CCCH	Common Control Channel
CCTrCH	Coded Composite Transport Channel
CS	Circuit switching
DCCH	Dedicated Control Channel
DL	Downlink
DPCH	Dedicated Physical Channel
DT	Direct transfer
DTCH	Dedicated Traffic Channel
FTM	File tunnelling mode
NAS	Non-access stratum
PRACH	Physical Random Access Channel
PS	Packet switching
RAB	Radio Access Bearer
RB	Radio Bearer
SCCPCH	Secondary Common Control Physical Channel
SMS	Short Message Service
SRB	Signalling RB
SSD	Source statistics descriptor
TC	Turbo coding
TM	Transparent mode
UL	Uplink
UM	Unacknowledgement mode

### 4. QoS Architecture and RAB attributes

From a user point-of-view services are considered end-to-end, this means from a Terminal Equipment (TE) to another TE. An End-to-End Service may have a certain Quality of Service (QoS) which is provided for the user through the different networks. In UMTS, it is the UMTS Bearer Service that provides the requested QoS through the use of different QoS classes as defined in TS 23.107 [3].

The UMTS Bearer Service consists of two parts, the Radio Access Bearer Service, RAB, and the Core Network Bearer Service. The Radio Access Bearer Service is realised by a Radio Bearer Service and an Iu-Bearer Service. The relationship between the services is illustrated in figure 1.

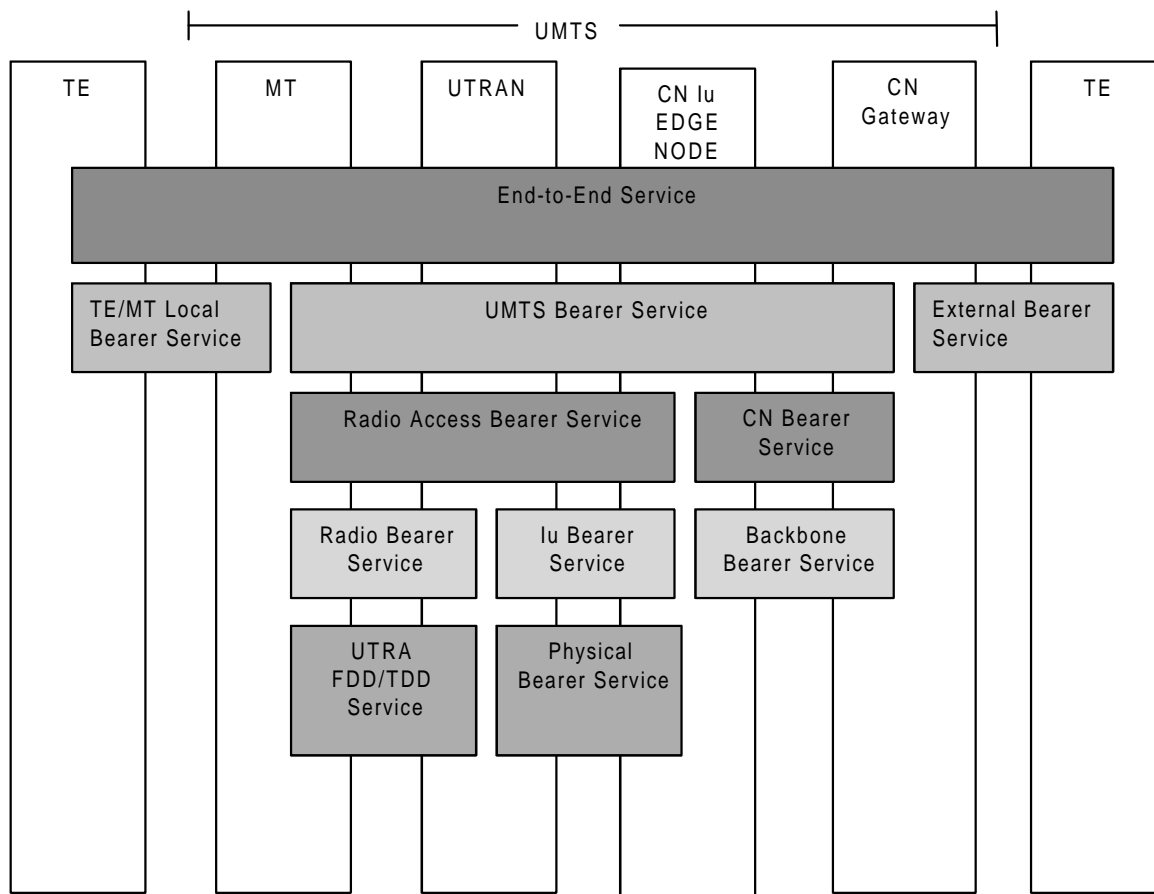


Figure 1: UMTS QoS Architecture

The Radio Access Bearer Service is characterised by a number of attributes such as Traffic class, Maximum bit rate, Guaranteed bit rate, SDU error ratio, Residual BER, Transfer Delay etc [3]. As a first approach the four following attributes have been considered to come up with the parameter settings in section 5.4:

- Traffic class
- SSD
- Maximum bit rate
- Residual BER

The Traffic classes are explained in table 1. The Maximum bit rate has been considered at RLC layer and Physical Layer for the acknowledged and unacknowledged modes respectively. The Residual BER is understood as BER at RLC layer and Transport BLER for the acknowledged and unacknowledged modes respectively.

**Table 1: Traffic classes**

Traffic class	Conversational class conversational RT	Streaming class streaming RT	Interactive class Interactive best effort	Background Background best effort
<b>Fundamental characteristics</b>	- Preserve time relation (variation) between information entities of the stream  Conversational pattern (stringent and low delay )	- Preserve time relation (variation) between information entities of the stream (i.e. some but constant delay)	Request response pattern  Preserve payload content	Destination is not expecting the data within a certain time  Preserve payload content
<b>Example of the application</b>	- speech, video, ...	- facsimile (NT)  - streaming audio and video	- Web browsing	- background download of emails

## 5. RAB and signalling RB

### 5.1. RABs and signalling RBs

In the following sections, the typical parameter sets are presented for reference RABs, signalling RBs and important combinations of them. The data rate given for each RAB is the maximum data rate that can be supported by that RAB. NOTE: The granularity for each RAB needs to be clarified.

**Table 2: Prioritised RABs.**

#	Traffic class <sup>[3]</sup>	SSD <sup>[3]</sup>	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:64 DL:64	CS
10	Conversational	Unknown	UL:32 DL:32	CS
11	Streaming	Unknown	UL:28.8 DL:28.8	CS
12	Streaming	Unknown	UL:57.6 DL:57.6	CS
13	Streaming	Unknown	UL:0 DL:64	PS
14	Streaming	Unknown	UL:0 DL:128	CS or PS
15	Streaming	Unknown	UL:0 DL:384	CS or PS
16	Interactive or Background	N/A	UL:32 DL:8	PS
17	Interactive or Background	N/A	UL:64 DL:8	PS
18	Interactive or Background	N/A	UL:32 DL:64	PS
19	Interactive or Background	N/A	UL:64 DL:64	PS
20	Interactive or Background	N/A	UL:64 DL:128	PS
21	Interactive or Background	N/A	UL:128 DL:128	PS
22	Interactive or Background	N/A	UL:64 DL:384	PS
23	Interactive or Background	N/A	UL:128 DL:384	PS
24	Interactive or Background	N/A	UL:384 DL:384	PS
25	Interactive or Background	N/A	UL:64 DL:2048	PS



26	Interactive or Background	N/A	UL:128 DL:2048	PS
27	Interactive or Background	N/A	UL:384 DL:2048	PS

**Table 3: Signalling RBs**

#	Maximum rate, kbps	Logical channel
1	UL:1.7 DL:1.7	DCCH
2	UL:3.4 DL:3.4	DCCH
3	UL:13.6 DL:13.6	DCCH
4	UL:16.6	CCCH
5	DL:50.4	CCCH
6	DL:16.6	BCCH:
7	DL:32	PCCH

## 5.2. Combinations of RABs and Signalling RBs

In this document, physical channel parameters for following combinations of RABs and signalling RBs on a CCTrCH are described.

### Combinations on DPCH

- 1) Stand-alone UL:1.7 DL:1.7 kbps SRBs for DCCH
- 2) Stand-alone UL:3.4 DL:3.4 kbps SRBs for DCCH
- 3) Stand-alone UL:13.6 DL:13.6 kbps SRBs for DCCH
- 4) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 5) Conversational / speech / UL:10.2 DL:10.2 kbps / CS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 6) Conversational / speech / UL:7.95 DL:7.95 kbps / CS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 7) Conversational / speech / UL:7.4 DL:7.4 kbps / CS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 8) Conversational / speech / UL:6.7 DL:6.7 kbps / CS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 9) Conversational / speech / UL:5.9 DL:5.9 kbps / CS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 10) Conversational / speech / UL:5.15 DL:5.15 kbps / CS RAB  
+ UL:1.7 DL:1.7 kbps SRBs for DCCH
- 11) Conversational / speech / UL:4.75 DL:4.75 kbps / CS RAB  
+ UL:1.7 DL:1.7 kbps SRBs for DCCH
- 12) Conversational / unknown / UL:64 DL:64 kbps / CS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 13) Conversational / unknown / UL:32 DL:32 kbps / CS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 14) Streaming / unknown / UL:28.8/DL:28.8 kbps / CS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 15) Streaming / unknown / UL:57.6/DL:57.6 kbps / CS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 16) Streaming / unknown / UL:0 DL:64 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 17) Streaming / unknown / UL:0 DL:128 kbps / CS or PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 18) Streaming / unknown / UL:0 DL:384 kbps / CS or PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 19) Interactive or background / UL:32 DL:8 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 20) Interactive or background / UL:64 DL:8 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH

- 21) Interactive or background / UL:32 DL: 64 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 22) Interactive or background / UL:64 DL: 64 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 23) Interactive or background / UL:64 DL:128 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 24) Interactive or background / UL:128 DL:128 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 25) Interactive or background / UL:64 DL:384 kbps / PS RAB  
+ UL:3.4 DL: 3.4 kbps SRBs for DCCH
- 26) Interactive or background / UL:128 DL:384 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 27) Interactive or background / UL:384 DL:384 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 28) Interactive or background / UL:64 DL:2048 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 29) Interactive or background / UL:128 DL:2048 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 30) Interactive or background / UL:384 DL:2048 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 31) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB  
+ Interactive or background / UL:32 DL:8 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 32) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB  
+ Interactive or background / UL:32 DL:64 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 33) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB  
+ Interactive or background / UL:64 DL:64 kbps / PS RAB  
+ UL:3.4 DL: 3.4 kbps SRBs for DCCH
- 34) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB  
+ Interactive or background / UL:64 DL:128 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 35) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB  
+ Interactive or background / UL:64 DL:384 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 36) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB  
+ Interactive or background / UL:128 DL:2048 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 37) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB  
+ Streaming / unknown / UL:57.6 DL:57.6 kbps / CS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 38) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB  
+ Streaming / unknown / UL:0 DL:64 kbps / CS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 39) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB  
+ Streaming / unknown / UL:0 DL:128 kbps / CS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 40) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB  
+ Streaming / unknown / UL:0 DL:384 kbps / CS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 41) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB  
+ Conversational / unknown / UL:64 DL:64 kbps / CS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 42) Conversational / unknown / UL:64 DL:64 kbps / CS RAB  
+ Conversational / unknown / UL:64 DL:64 kbps / CS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 43) Conversational / unknown / UL:64 DL:64 kbps / CS RAB  
+ Interactive or background / UL:64 DL:64 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH

- 44) Conversational / unknown / UL:64 DL:64 kbps / CS RAB  
 + Interactive or background / UL:64 DL:128 kbps / PS RAB  
 + UL:3.4 DL:3.4 kbps SRBs for DCCH
- 45) Conversational / unknown / UL:64 DL:64 kbps / CS RAB  
 + Interactive or background / UL:128 DL:128 kbps / PS RAB  
 + UL:3.4 DL:3.4 kbps SRBs for DCCH
- 46) Interactive or /background / UL:64 kbps DL:128 kbps / PS RAB  
 + Streaming / unknown / UL:0 DL:64 kbps / CS RAB  
 + UL:3.4 DL:3.4 kbps SRBs for DCCH
- 47) Interactive or /background / UL:64 kbps DL:128 kbps / PS RAB  
 + Streaming / unknown / UL:0 DL:128 kbps / CS RAB  
 + UL:3.4 DL:3.4 kbps SRBs for DCCH

#### Combinations on DSCH and DPCH

- 1) Interactive or background / UL:64 DL:384 kbps / PS RAB  
 + UL:3.4 DL: 3.4 kbps SRBs for DCCH
- 2) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB  
 + Interactive or background / UL:64 DL:384 kbps / PS RAB  
 + UL:3.4 DL:3.4 kbps SRBs for DCCH
- 3) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB  
 + Interactive or background / UL:64 DL:2048 kbps / PS RAB  
 + UL:3.4 DL:3.4 kbps SRBs for DCCH

#### Combinations on SCCPCH

- 1) Stand-alone 32 kbps SRB for PCCH
- 2) Interactive or background / DL:32 kbps / PS RAB  
 + 50.4 kbps SRB for CCCH  
 + 13.6 kbps SRBs for DCCH  
 + 16.6 kbps SRB for BCCH
- 3) Interactive or background / DL:32 kbps / PS RAB  
 + 32 kbps SRB for PCCH  
 + 50.4 kbps SRB for CCCH  
 + 13.6 kbps SRBs for DCCH  
 + 16.6 kbps SRB for BCCH

#### Combinations on PRACH

- 1) Interactive or background / UL:32 kbps / PS RAB  
 + 16.6 kbps SRB for CCCH  
 + 13.6 kbps SRBs for DCCH

### 5.3. Example of linkage between RABs and services

RABs, which are included in this document, can provide the services as shown in Table 1. Furthermore, the required BER for each RAB, which is assumed in this document, is shown in Table 4.

**Table 4: Example of linkage between RABs and services**

RAB				Residual BER <sup>[3]</sup>	Services
Traffic class <sup>[3]</sup>	SSD <sup>[3]</sup>	Max. rate, kbps	CS/PS		
Conversational	Speech	UL:4.75-12.2 DL:4.75-12.2	CS	$5 \times 10^{-4}$ , $1 \times 10^{-3}$ , $5 \times 10^{-3}$	AMR speech
Conversational	Unknown	UL:64 DL:64	CS	$1 \times 10^{-4}$ or $1 \times 10^{-6}$	UDI 1B, 64k 3G-324M <sup>[4]</sup>
Conversational	Unknown	UL:32 DL:32	CS	$1 \times 10^{-4}$ or $1 \times 10^{-6}$	32k 3G-324M <sup>[4]</sup>
Streaming	Unknown	UL:28.8 DL:28.8	CS	$1 \times 10^{-3}$	FAX <sup>[6]</sup> PIAFS 32 kbps
Streaming	Unknown	UL:57.6 DL:57.6	CS	$1 \times 10^{-3}$	Modem <sup>[6]</sup> , FTM <sup>[5]</sup> , PIAFS 64 kbps

Streaming	Unknown	UL:0 DL:64	PS	$1 \times 10^{-3}$ or $1 \times 10^{-4}$	Streaming video, uni-directional
Streaming	Unknown	UL:0 DL:128-384	CS or PS	$1 \times 10^{-3}$ or $1 \times 10^{-4}$	
Interactive or Background	N/A	UL:32-384 DL:8-2048	PS	$1 \times 10^{-3}$ or $1 \times 10^{-4}$	Packet

Note: SMS can be provided via the signalling RB (DCCH) on DPCH or SCCPCH.

Note: CBS can be provided via the signalling RB (CTCH) on SCCPCH

Note: UDI  $n$ B can be provided via  $n$  RABs of conversational 64 kbps.

## 5.4. Typical parameter sets

### 5.4.1. Combinations on DPCH

#### 5.4.1.1. Transport channel parameters for RABs and signalling RBs

##### 5.4.1.1.1. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB

###### 5.4.1.1.1.1. Uplink

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	RAB subflow #3	
RLC	Logical channel type	DTCH			
	RLC mode	TM	TM	TM	
	Payload sizes, bit	81 39	103	60	
	Max data rate, bps	12200			
	RLC header, bit	0			
MAC	MAC header, bit	0			
	MAC multiplexing	N/A			
Layer 1	TrCH type	DCH	DCH	DCH	
	TB sizes, bit	81 39	103	60	
	TFS	TF0, bits	0	0	0
		TF1, bits	1x81	1x103	1x60
		TF2, bits	1x39	-	-
	TTI, ms	20	20	20	
	Coding type	CC 1/3	CC 1/3	CC 1/2	
	CRC, bit	12	-	-	
	Max number of bits/TTI after channel coding	303	333	136	
	Uplink: Max number of bits/radio frame before rate matching	152	167	68	

###### 5.4.1.1.1.2. Downlink

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	RAB subflow #3	
RLC	Logical channel type	DTCH			
	RLC mode	TM	TM	TM	
	Payload sizes, bit	81 39	103	60	
	Max data rate, bps	12200			
	RLC header, bit	0			
MAC	MAC header, bit	0			
	MAC multiplexing	N/A			
Layer 1	TrCH type	DCH	DCH	DCH	
	TB sizes, bit	81 39	103	60	
	TFS	TF0, bits	0	0	0
		TF1, bits	1x81	1x103	1x60
		TF2, bits	1x39	-	-
	TTI, ms	20	20	20	
	Coding type	CC 1/3	CC 1/3	CC 1/2	
	CRC, bit	12	-	-	
		12			

	Max number of bits/TTI after channel coding	303	333	136
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#### 5.4.1.1.2. Conversational / speech / UL:10.2 DL:10.2 kbps / CS RAB

##### 5.4.1.1.2.1. Uplink

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	RAB subflow #3	
RLC	Logical channel type	DTCH			
	RLC mode	TM	TM	TM	
	Payload sizes, bit	65 39	99	40	
	Max data rate, bps	10200			
	RLC header, bit	0			
MAC	MAC header, bit	0			
	MAC multiplexing	N/A			
Layer 1	TrCH type	DCH	DCH	DCH	
	TB sizes, bit	65 39	99	40	
	TFS	TF0, bits	0	0	0
		TF1, bits	1x65	1x99	1x40
		TF2, bits	1x39	-	-
	TTI, ms	20	20	20	
	Coding type	CC 1/3	CC 1/3	CC 1/2	
	CRC, bit	12	-	-	
	Max number of bits/TTI after channel coding	255	321	96	
Uplink: Max number of bits/radio frame before rate matching	128	161	48		

##### 5.4.1.1.2.2. Downlink

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	RAB subflow #3	
RLC	Logical channel type	DTCH			
	RLC mode	TM	TM	TM	
	Payload sizes, bit	65 39	99	40	
	Max data rate, bps	10200			
	RLC header, bit	0			
MAC	MAC header, bit	0			
	MAC multiplexing	N/A			
Layer 1	TrCH type	DCH	DCH	DCH	
	TB sizes, bit	65 39	99	40	
	TFS	TF0, bits	0	0	0
		TF1, bits	1x65	1x99	1x40
		TF2, bits	1x39	-	-
	TTI, ms	20	20	20	
	Coding type	CC 1/3	CC 1/3	CC 1/2	
	CRC, bit	12	-	-	
	Max number of bits/TTI after channel coding	255	321	96	

#### 5.4.1.1.3. Conversational / speech / UL:7.95 DL:7.95 kbps / CS RAB

**5.4.1.1.3.1. Uplink**

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	
RLC	Logical channel type	DTCH		
	RLC mode	TM	TM	
	Payload sizes, bit	75	84	
		39		
	Max data rate, bps	7950		
RLC header, bit	0			
MAC	MAC header, bit	0		
	MAC multiplexing	N/A		
Layer 1	TrCH type	DCH	DCH	
	TB sizes, bit	75	84	
		39		
	TFS	TF0, bits	0	0
		TF1, bits	1x75	1x84
		TF2, bits	1x39	-
	TTI, ms	20	20	
	Coding type	CC 1/3	CC 1/3	
	CRC, bit	12	-	
	Max number of bits/TTI after channel coding	285	276	
Uplink: Max number of bits/radio frame before rate matching	143	138		

**5.4.1.1.3.2. Downlink**

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	
RLC	Logical channel type	DTCH		
	RLC mode	TM	TM	
	Payload sizes, bit	75	84	
		39		
	Max data rate, bps	7950		
RLC header, bit	0			
MAC	MAC header, bit	0		
	MAC multiplexing	N/A		
Layer 1	TrCH type	DCH	DCH	
	TB sizes, bit	75	84	
		39		
	TFS	TF0, bits	0	0
		TF1, bits	1x75	1x84
		TF2, bits	1x39	-
	TTI, ms	20	20	
	Coding type	CC 1/3	CC 1/3	
	CRC, bit	12	-	
	Max number of bits/TTI after channel coding	285	276	

**5.4.1.1.4. Conversational / speech / UL:7.4 DL:7.4 kbps / CS RAB****5.4.1.1.4.1. Uplink**

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2
RLC	Logical channel type	DTCH	
	RLC mode	TM	TM
	Payload sizes, bit	61	87
39			

	Max data rate, bps	7400		
	RLC header, bit	0		
MAC	MAC header, bit	0		
	MAC multiplexing	N/A		
Layer 1	TrCH type	DCH	DCH	
	TB sizes, bit	61	87	
		39		
	TFS	TF0, bits	0	0
		TF1, bits	1x61	1x87
		TF2, bits	1x39	-
	TTI, ms	20	20	
	Coding type	CC 1/3	CC 1/3	
	CRC, bit	12	-	
Max number of bits/TTI after channel coding	243	285		
Uplink: Max number of bits/radio frame before rate matching	122	143		

#### 5.4.1.1.4.2. Downlink

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	
RLC	Logical channel type	DTCH		
	RLC mode	TM	TM	
	Payload sizes, bit	61	87	
		39		
	Max data rate, bps	7400		
RLC header, bit	0			
MAC	MAC header, bit	0		
	MAC multiplexing	N/A		
Layer 1	TrCH type	DCH	DCH	
	TB sizes, bit	61	87	
		39		
	TFS	TF0, bits	0	0
		TF1, bits	1x61	1x87
		TF2, bits	1x39	-
	TTI, ms	20	20	
	Coding type	CC 1/3	CC 1/3	
	CRC, bit	12	-	
Max number of bits/TTI after channel coding	243	285		

#### 5.4.1.1.5. Conversational / speech / UL:6.7 DL:6.7 kbps / CS RAB

##### 5.4.1.1.5.1. Uplink

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2
RLC	Logical channel type	DTCH	
	RLC mode	TM	TM
	Payload sizes, bit	58	76
		39	
	Max data rate, bps	6700	
RLC header, bit	0		
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	DCH
	TB sizes, bit	58	76
		39	



	TFS	TF0, bits	0	0
		TF1, bits	1x58	1x76
		TF2, bits	1x39	-
	TTI, ms	20	20	
	Coding type	CC 1/3	CC 1/3	
	CRC, bit	12	-	
	Max number of bits/TTI after channel coding	234	252	
	Uplink: Max number of bits/radio frame before rate matching	117	126	

#### 5.4.1.1.5.2. Downlink

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	
RLC	Logical channel type	DTCH		
	RLC mode	TM	TM	
	Payload sizes, bit	58 39	76	
	Max data rate, bps	6700		
	RLC header, bit	0		
MAC	MAC header, bit	0		
	MAC multiplexing	N/A		
Layer 1	TrCH type	DCH	DCH	
	TB sizes, bit	58	76	
		39		
	TFS	TF0, bits	0	0
		TF1, bits	1x58	1x76
		TF2, bits	1x39	-
	TTI, ms	20	20	
	Coding type	CC 1/3	CC 1/3	
CRC, bit	12	-		
Max number of bits/TTI after channel coding	234	252		

#### 5.4.1.1.6. Conversational / speech / UL:5.9 DL:5.9 kbps / CS RAB

##### 5.4.1.1.6.1. Uplink

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	
RLC	Logical channel type	DTCH		
	RLC mode	TM	TM	
	Payload sizes, bit	55 39	63	
	Max data rate, bps	5900		
	RLC header, bit	0		
MAC	MAC header, bit	0		
	MAC multiplexing	N/A		
Layer 1	TrCH type	DCH	DCH	
	TB sizes, bit	55	63	
		39		
	TFS	TF0, bits	0	0
		TF1, bits	1x55	1x63
		TF2, bits	1x39	-
	TTI, ms	20	20	
	Coding type	CC 1/3	CC 1/3	
CRC, bit	12	-		
Max number of bits/TTI after channel coding	225	213		

	Uplink: Max number of bits/radio frame before rate matching	113	107
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#### 5.4.1.1.6.2. Downlink

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	
RLC	Logical channel type	DTCH		
	RLC mode	TM	TM	
	Payload sizes, bit	55 39	63	
	Max data rate, bps	5900		
	RLC header, bit	0		
MAC	MAC header, bit	0		
	MAC multiplexing	N/A		
Layer 1	TrCH type	DCH	DCH	
	TB sizes, bit	55 39	63	
	TFS	TF0, bits	0	0
		TF1, bits	1x55	1x63
		TF2, bits	1x39	-
	TTI, ms	20	20	
	Coding type	CC 1/3	CC 1/3	
	CRC, bit	12	-	
Max number of bits/TTI after channel coding	225	213		

#### 5.4.1.1.7. Conversational / speech / UL:5.15 DL:5.15 kbps / CS RAB

##### 5.4.1.1.7.1. Uplink

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	
RLC	Logical channel type	DTCH		
	RLC mode	TM	TM	
	Payload sizes, bit	49 39	54	
	Max data rate, bps	5150		
	RLC header, bit	0		
MAC	MAC header, bit	0		
	MAC multiplexing	N/A		
Layer 1	TrCH type	DCH	DCH	
	TB sizes, bit	49 39	54	
	TFS	TF0, bits	0	0
		TF1, bits	1x49	1x54
		TF2, bits	1x39	-
	TTI, ms	20	20	
	Coding type	CC 1/3	CC 1/3	
	CRC, bit	12	-	
	Max number of bits/TTI after channel coding	207	186	
	Uplink: Max number of bits/radio frame before rate matching	104	93	

##### 5.4.1.1.7.2. Downlink

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2
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RLC	Logical channel type		DTCH	
	RLC mode		TM	TM
	Payload sizes, bit		49 39	54
	Max data rate, bps		5150	
	RLC header, bit		0	
MAC	MAC header, bit		0	
	MAC multiplexing		N/A	
Layer 1	TrCH type		DCH	DCH
	TB sizes, bit		49 39	54
	TFS	TF0, bits	0	0
		TF1, bits	1x49	1x54
		TF2, bits	1x39	-
	TTI, ms		20	20
	Coding type		CC 1/3	CC 1/3
	CRC, bit		12	-
Max number of bits/TTI after channel coding		207	186	

**5.4.1.1.8. Conversational / speech / UL:4.75 DL:4.75 kbps / CS RAB**

**5.4.1.1.8.1. Uplink**

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	
RLC	Logical channel type		DTCH	
	RLC mode		TM	TM
	Payload sizes, bit		42 39	53
	Max data rate, bps		4750	
	RLC header, bit		0	
MAC	MAC header, bit		0	
	MAC multiplexing		N/A	
Layer 1	TrCH type		DCH	DCH
	TB sizes, bit		42 39	53
	TFS	TF0, bits	0	0
		TF1, bits	1x42	1x53
		TF2, bits	1x39	-
	TTI, ms		20	20
	Coding type		CC 1/3	CC 1/3
	CRC, bit		12	-
	Max number of bits/TTI after channel coding		186	183
Uplink: Max number of bits/radio frame before rate matching		93	92	

**5.4.1.1.8.2. Downlink**

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	
RLC	Logical channel type		DTCH	
	RLC mode		TM	TM
	Payload sizes, bit		42 39	53
	Max data rate, bps		4750	
	RLC header, bit		0	
MAC	MAC header, bit		0	

	MAC multiplexing	N/A		
Layer 1	TrCH type	DCH	DCH	
	TB sizes, bit	42 39	53	
	TFS	TF0, bits	0	0
		TF1, bits	1x42	1x53
		TF2, bits	1x39	-
	TTI, ms	20	20	
	Coding type	CC 1/3	CC 1/3	
	CRC, bit	12	-	
Max number of bits/TTI after channel coding	186	183		

#### 5.4.1.1.9. Conversational / unknown / UL:64 DL:64 kbps / CS RAB

##### 5.4.1.1.9.1. Uplink

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	TM	
	Payload sizes, bit	640	
	Max data rate, bps	64000	
	RLC header, bit	0	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	640	
	TFS	TF0, bits	0
		TF1, bits	2x640(alt. 4x640)
	TTI, ms	20(alt. 40)	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	3948(alt. 7884)	
Uplink: Max number of bits/radio frame before rate matching	1974(alt. 1971)		

##### 5.4.1.1.9.2. Downlink

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	TM	
	Payload sizes, bit	640	
	Max data rate, bps	64000	
	RLC header, bit	0	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	640	
	TFS	TF0, bits	0
		TF1, bits	2x640(alt. 4x640)
	TTI, ms	20(alt. 40)	
	Coding type	TC	
	CRC, bit	16	
Max number of bits/TTI after channel coding	3948(alt. 7884)		

#### 5.4.1.1.10. Conversational / unknown / UL:32 DL:32 kbps / CS RAB

**5.4.1.1.10.1. Uplink**

Higher layer	RAB/Signalling RB	<b>RAB</b>	
RLC	Logical channel type	DTCH	
	RLC mode	TM	
	Payload sizes, bit	640	
	Max data rate, bps	32000	
	RLC header, bit	0	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	640	
	TFS	TF0, bits	0
		TF1, bits	1x640(alt. 2x640)
	TTI, ms	20(alt. 40)	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	1980(alt. 3948)	
Uplink: Max number of bits/radio frame before rate matching	990(alt. 987)		

**5.4.1.1.10.2. Downlink**

Higher layer	RAB/Signalling RB	<b>RAB</b>	
RLC	Logical channel type	DTCH	
	RLC mode	TM	
	Payload sizes, bit	640	
	Max data rate, bps	32000	
	RLC header, bit	0	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	640	
	TFS	TF0, bits	0
		TF1, bits	1x640(alt. 2x640)
	TTI, ms	20(alt. 40)	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	1980(alt. 3948)	

**5.4.1.1.11. Streaming / unknown / UL:28.8/DL:28.8 kbps / CS RAB****5.4.1.1.11.1. Uplink**

Higher layer	RAB/Signalling RB	<b>RAB</b>
RLC	Logical channel type	DTCH
	RLC mode	TM
	Payload sizes, bit	576
	Max data rate, bps	28800
	RLC header, bit	0
MAC	MAC header, bit	0
	MAC multiplexing	N/A
Layer 1	TrCH type	DCH
	TB sizes, bit	576

	TFS	TF0, bits	0
		TF1, bits	1x576
		TF2, bits	2x576
	TTI, ms		40
	Coding type		TC
	CRC, bit		16
	Max number of bits/TTI after channel coding		3564
	Uplink: Max number of bits/radio frame before rate matching		891

#### 5.4.1.1.11.2. Downlink

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	TM	
	Payload sizes, bit	576	
	Max data rate, bps	28800	
	RLC header, bit	0	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	576	
	TFS	TF0, bits	0
		TF1, bits	1x576
		TF2, bits	2x576
	TTI, ms		40
	Coding type		TC
	CRC, bit		16
	Max number of bits/TTI after channel coding		3564

#### 5.4.1.1.12. Streaming / unknown / UL:57.6/DL:57.6 kbps / CS RAB

##### 5.4.1.1.12.1. Uplink

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	TM	
	Payload sizes, bit	576	
	Max data rate, bps	57600	
	RLC header, bit	0	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	576	
	TFS	TF0, bits	0
		TF1, bits	1x576
		TF2, bits	2x576
		TF3, bits	3x576
		TF4, bits	4x576
	TTI, ms		40
	Coding type		TC
	CRC, bit		16
	Max number of bits/TTI after channel coding		7116
Uplink: Max number of bits/radio frame before rate matching		1779	

**5.4.1.1.12.2. Downlink**

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	TM	
	Payload sizes, bit	576	
	Max data rate, bps	57600	
	RLC header, bit	0	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	576	
	TFS	TF0, bits	0
		TF1, bits	1x576
		TF2, bits	2x576
		TF3, bits	3x576
		TF4, bits	4x576
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
Max number of bits/TTI after channel coding	7116		

**5.4.1.1.13. Streaming / unknown / UL:0 DL:64 kbps / PS RAB****5.4.1.1.13.1. Uplink**

TBD

**5.4.1.1.13.2. Downlink**

TBD

**5.4.1.1.14. Streaming / unknown / UL:0 DL:128 kbps / CS or PS RAB****5.4.1.1.14.1. Uplink**

TBD

**5.4.1.1.14.2. Downlink**

TBD

**5.4.1.1.15. Streaming / unknown / UL:0 DL:384 kbps / CS or PS RAB****5.4.1.1.15.1. Uplink**

TBD

**5.4.1.1.15.2. Downlink**

TBD

**5.4.1.1.16. Interactive or background / UL:32 DL:8 kbps / PS RAB****5.4.1.1.16.1. Uplink**

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

#### 5.4.1.1.16.2. Downlink

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	320	
	Max data rate, bps	8000	
	RLC header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	336	
	TFS	TF0, bits	0
		TF1, bits	1x336
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	1068	

#### 5.4.1.1.17. Interactive or background / UL:64 DL:8 kbps / PS RAB

##### 5.4.1.1.17.1. Uplink

Higher layer	RAB/Signalling RB	RAB
RLC	Logical channel type	DTCH
	RLC mode	AM
	Payload sizes, bit	320
	Max data rate, bps	64000
	RLC header, bit	16
MAC	MAC header, bit	0
	MAC multiplexing	N/A
Layer 1	TrCH type	DCH
	TB sizes, bit	336



	TFS	TF0, bits	0
		TF1, bits	1x336
		TF2, bits	2x336
		TF3, bits	4x336
	TTI, ms	20	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	4236	
	Uplink: Max number of bits/radio frame before rate matching	2118	

**5.4.1.1.17.2. Downlink**

See 5.4.1.1.16.2.

**5.4.1.1.18. Interactive or background / UL:32 DL: 64 kbps / PS RAB****5.4.1.1.18.1. Uplink**

See 5.4.1.1.16.1.

**5.4.1.1.18.2. Downlink**

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	320	
	Max data rate, bps	64000	
	RLC header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	336	
	TFS	TF0, bits	0
		TF1, bits	1x336
		TF2, bits	2x336
		TF3, bits	4x336
	TTI, ms	20	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	4236	

**5.4.1.1.19. Interactive or background / UL:64 DL: 64 kbps / PS RAB****5.4.1.1.19.1. Uplink**

See 5.4.1.1.17.1.

**5.4.1.1.19.2. Downlink**

See 5.4.1.1.18.2.

**5.4.1.1.20. Interactive or background / UL:64 DL:128 kbps / PS RAB****5.4.1.1.20.1. Uplink**

See 5.4.1.1.17.1.

**5.4.1.1.20.2. Downlink**

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	320	
	Max data rate, bps	128000	
	RLC header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	336	
	TFS	TF0, bits	0
		TF1, bits	1x336
		TF2, bits	2x336
		TF3, bits	4 x336
		TF4, bits	8 x336
	TTI, ms	20	
	Coding type	TC	
	CRC, bit	16	
Max number of bits/TTI after channel coding	8460		

**5.4.1.1.21. Interactive or background / UL:128 DL:128 kbps / PS RAB****5.4.1.1.21.1. Uplink**

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	320	
	Max data rate, bps	128000	
	RLC header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	336	
	TFS	TF0, bits	0
		TF1, bits	1x336
		TF2, bits	2x336
		TF3, bits	4 x336
		TF4, bits	8 x336
	TTI, ms	20	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	8460	
Uplink: Max number of bits/radio frame before rate matching	4230		

**5.4.1.1.21.2. Downlink**

See 5.4.1.1.20.2.

**5.4.1.1.22. Interactive or background / UL:64 DL:384 kbps / PS RAB**

**5.4.1.1.22.1. Uplink**

See 5.4.1.1.17.1.

**5.4.1.1.22.2. Downlink**

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	320	
	Max data rate, bps	384000	
	RLC header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH(or DSCH for DL)	
	TB sizes, bit	336	
	TFS	TF0, bits	0
		TF1, bits	1x336
		TF2, bits	2x336
		TF3, bits	4 x336
		TF4, bits	8 x336
		TF5, bits	12x336
	(alt. TF6, bits)	(alt. 24 x336)	
	TTI, ms	10(alt. 20)	
	Coding type	TC	
	CRC, bit	16	
Max number of bits/TTI after channel coding	12684(alt. 25368)		

**5.4.1.1.23. Interactive or background / UL:128 DL:384 kbps / PS RAB****5.4.1.1.23.1. Uplink**

See 5.4.1.1.21.1.

**5.4.1.1.23.2. Downlink**

See 5.4.1.1.22.2.

**5.4.1.1.24. Interactive or background / UL:384 DL:384 kbps / PS RAB****5.4.1.1.24.1. Uplink**

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	320	
	Max data rate, bps	384000	
	RLC header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH(or DSCH for DL)	
	TB sizes, bit	336	
	TFS	TF0, bits	0
		TF1, bits	1x336
		TF2, bits	2x336
		TF3, bits	4 x336

	TF4, bits	8 x336
	TF5, bits	12x336
	(alt. TF6, bits)	(alt. 24 x336)
	TTI, ms	10(alt. 20)
	Coding type	TC
	CRC, bit	16
	Max number of bits/TTI after channel coding	12684(alt. 25368)
	Uplink: Max number of bits/radio frame before rate matching	12684

**5.4.1.1.24.2. Downlink**

See 5.4.1.1.22.2.

**5.4.1.1.25. Interactive or background / UL:64 DL:2048 kbps / PS RAB****5.4.1.1.25.1. Uplink**

See 5.4.1.1.17.1.

**5.4.1.1.25.2. Downlink**

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	AM	
	Payload sizes, bit	640	
	Max data rate, bps	2048000	
	RLC header, bit	16	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH(or DSCH for DL)	
	TB sizes, bit	656	
	TFS	TF0, bits	0
		TF1, bits	1x656
		TF2, bits	2x656
		TF3, bits	4 x656
		TF4, bits	8 x656
		TF5, bits	16x656
		TF6, bits	32x656
		(alt. TF7, bits)	(alt. 64x656)
	TTI, ms	10(alt. 20)	
	Coding type	TC	
	CRC, bit	16	
Max number of bits/TTI after channel coding	64572 (alt. 129132)		

**5.4.1.1.26. Interactive or background / UL:128 DL:2048 kbps / PS RAB****5.4.1.1.26.1. Uplink**

See 5.4.1.1.21.1.

**5.4.1.1.26.2. Downlink**

See 5.4.1.1.25.2.

**5.4.1.1.27. Interactive or background / UL:384 DL:2048 kbps / PS RAB**

**5.4.1.1.27.1. Uplink**

See 5.4.1.1.24.1.

**5.4.1.1.27.2. Downlink**

See 5.4.1.1.25.2.

**5.4.1.1.28. UL:1.7 DL:1.7 kbps SRBs for DCCH****5.4.1.1.28.1. Uplink**

Higher layer	RAB/signalling RB	<b>SRB#1</b>	<b>SRB#2</b>	<b>SRB#3</b>	<b>SRB#4</b>	
	User of Radio Bearer	RRC	RRC	NAS_DT High prio	NAS_DT Low prio	
RLC	Logical channel type	DCCH	DCCH	DCCH	DCCH	
	RLC mode	UM	AM	AM	AM	
	Payload sizes, bit	136	128	128	128	
	Max data rate, bps	1700	1600	1600	1600	
	RLC header, bit	8	16	16	16	
MAC	MAC header, bit	4	4	4	4	
	MAC multiplexing	4 logical channel multiplexing				
Layer 1	TrCH type	DCH				
	TB sizes, bit	148				
	TFS	TF0, bts	0			
		TF1, bits	1x148			
	TTI, ms	80				
	Coding type	CC 1/3				
	CRC, bit	16				
	Max number of bits/TTI before rate matching	516				
Uplink; Max number of bits/radio frame before rate matching	65					

**5.4.1.1.28.2. Downlink**

Higher layer	RAB/signalling RB	<b>SRB#1</b>	<b>SRB#2</b>	<b>SRB#3</b>	<b>SRB#4</b>	
	User of Radio Bearer	RRC	RRC	NAS_DT High prio	NAS_DT Low prio	
RLC	Logical channel type	DCCH	DCCH	DCCH	DCCH	
	RLC mode	UM	AM	AM	AM	
	Payload sizes, bit	136	128	128	128	
	Max data rate, bps	1700	1600	1600	1600	
	RLC header, bit	8	16	16	16	
MAC	MAC header, bit	4	4	4	4	
	MAC multiplexing	4 logical channel multiplexing				
Layer 1	TrCH type	DCH				
	TB sizes, bit	148				
	TFS	TF0, bts	0			
		TF1, bits	1x148			
	TTI, ms	80				
	Coding type	CC 1/3				
	CRC, bit	16				
	Max number of bits/TTI before rate matching	516				

**5.4.1.1.29. UL:3.4 DL:3.4 kbps SRBs for DCCH**

**5.4.1.1.29.1. Uplink**

Higher layer	RAB/signalling RB	<b>SRB#1</b>	<b>SRB#2</b>	<b>SRB#3</b>	<b>SRB#4</b>	
	User of Radio Bearer	RRC	RRC	NAS_DT High prio	NAS_DT Low prio	
RLC	Logical channel type	DCCH	DCCH	DCCH	DCCH	
	RLC mode	UM	AM	AM	AM	
	Payload sizes, bit	136	128	128	128	
	Max data rate, bps	3400	3200	3200	3200	
	RLC header, bit	8	16	16	16	
MAC	MAC header, bit	4	4	4	4	
	MAC multiplexing	4 logical channel multiplexing				
Layer 1	TrCH type	DCH				
	TB sizes, bit	148				
	TFS	TF0, bts	0			
		TF1, bits	1x148			
	TTI, ms	40				
	Coding type	CC 1/3				
	CRC, bit	16				
	Max number of bits/TTI before rate matching	516				
Uplink; Max number of bits/radio frame before rate matching	129					

**5.4.1.1.29.2. Downlink**

Higher layer	RAB/signalling RB	<b>SRB#1</b>	<b>SRB#2</b>	<b>SRB#3</b>	<b>SRB#4</b>	
	User of Radio Bearer	RRC	RRC	NAS_DT High prio	NAS_DT Low prio	
RLC	Logical channel type	DCCH	DCCH	DCCH	DCCH	
	RLC mode	UM	AM	AM	AM	
	Payload sizes, bit	136	128	128	128	
	Max data rate, bps	3400	3200	3200	3200	
	RLC header, bit	8	16	16	16	
MAC	MAC header, bit	4	4	4	4	
	MAC multiplexing	4 logical channel multiplexing				
Layer 1	TrCH type	DCH				
	TB sizes, bit	148				
	TFS	TF0, bts	0			
		TF1, bits	1x148			
	TTI, ms	40				
	Coding type	CC 1/3				
	CRC, bit	16				
	Max number of bits/TTI before rate matching	516				

**5.4.1.1.30. UL:13.6 DL:13.6 kbps SRBs for DCCH****5.4.1.1.30.1. Uplink**

Higher layer	RAB/signalling RB	<b>SRB#1</b>	<b>SRB#2</b>	<b>SRB#3</b>	<b>SRB#4</b>
	User of Radio Bearer	RRC	RRC	NAS_DT High prio	NAS_DT Low prio
RLC	Logical channel type	DCCH	DCCH	DCCH	DCCH
	RLC mode	UM	AM	AM	AM
	Payload sizes, bit	136	128	128	128
	Max data rate, bps	13600	12800	12800	12800
	RLC header, bit	8	16	16	16

MAC	MAC header, bit	4	4	4	4	
	MAC multiplexing	4 logical channel multiplexing				
Layer 1	TrCH type	DCH				
	TB sizes, bit	148				
	TFS	TF0, bts	0			
		TF1, bits	1x148			
		TF2, bits	2x148			
	TTI, ms	20				
	Coding type	CC 1/3				
	CRC, bit	16				
	Max number of bits/TTI before rate matching	1008				
Uplink; Max number of bits/radio frame before rate matching	504					

5.4.1.1.30.2. Downlink

Higher layer	RAB/signalling RB	<b>SRB#1</b>	<b>SRB#2</b>	<b>SRB#3</b>	<b>SRB#4</b>	
	User of Radio Bearer	RRC	RRC	NAS_DT High prio	NAS_DT Low prio	
RLC	Logical channel type	DCCH	DCCH	DCCH	DCCH	
	RLC mode	UM	AM	AM	AM	
	Payload sizes, bit	136	128	128	128	
	Max data rate, bps	13600	12800	12800	12800	
	RLC header, bit	8	16	16	16	
MAC	MAC header, bit	4	4	4	4	
	MAC multiplexing	4 logical channel multiplexing				
Layer 1	TrCH type	DCH				
	TB sizes, bit	148				
	TFS	TF0, bts	0			
		TF1, bits	1x148			
		TF2, bits	2x148			
	TTI, ms	20				
	Coding type	CC 1/3				
	CRC, bit	16				
	Max number of bits/TTI before rate matching	1008				

**5.4.1.2. Physical channel parameters for combinations of RABs and signalling RBs****5.4.1.2.1. Stand-alone UL:1.7 DL:1.7 kbps SRBs for DCCH****5.4.1.2.1.1. Uplink**

DPCH Uplink	RAB or SRB, TrCh		<b>1.7 kbps SRB for DCCH, DCH</b>
	TFCS size		2
	Min spreading factor		256
	Max number of DPDCH data bits/radio frame		150
	Puncturing Limit		1

**5.4.1.2.1.2. Downlink**

DPCH Downlink	RAB or SRB, TrCh		<b>1.7 kbps SRB for DCCH, DCH</b>	
	DTX position		N/A (SingleTrCH)	
	TFCS size		2	
	Minimum spreading factor		512	
	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		4
Number of data bits/frame		60		

**5.4.1.2.2. Stand-alone UL:3.4 DL:3.4 kbps SRBs for DCCH****5.4.1.2.2.1. Uplink**

DPCH Uplink	RAB or SRB, TrCh		<b>3.4 kbps SRB for DCCH, DCH</b>
	TFCS size		2
	Min spreading factor		256
	Max number of DPDCH data bits/radio frame		150
	Puncturing Limit		1

**5.4.1.2.2.2. Downlink**

DPCH Downlink	RAB or SRB, TrCh		<b>3.4 kbps SRB for DCCH, DCH</b>	
	DTX position		N/A (SingleTrCH)	
	TFCS size		2	
	Minimum spreading factor		256	
	DPCCH	Number of TFCI bits/slot		0
		Number of TPC bits/slot		2
		Number of Pilot bits/slot		8
	DPDCH	Number of data bits/slot		10
Number of data bits/frame		150		

**5.4.1.2.3. Stand-alone UL:13.6 DL:13.6 kbps SRBs for DCCH****5.4.1.2.3.1. Uplink**

DPCH Uplink	RAB or SRB, TrCh		<b>13.6 kbps SRB for DCCH, DCH</b>
	TFCS size		3
	Min spreading factor		64
	Max number of DPDCH data bits/radio frame		600
	Puncturing Limit		1

**5.4.1.2.3.2. Downlink**



DPCH Downlink	RAB or SRB, TrCh		<b>13.6 kbps SRB for DCCH, DCH</b>
	DTX position		N/A (SingleTrCH)
	TFCS size		3
	Minimum 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	

#### 5.4.1.2.4. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

##### 5.4.1.2.4.1. Uplink

DPCH Uplink	RAB or SRB, TrCh		<b>Conversational / speech / 12.2 kbps / CS RAB, DCH</b>			<b>3.4 kbps SRBs for DCCH, DCH</b>
			RAB subflow #1	RAB subflow #2	RAB subflow #3	
	RM attribute		TBD	TBD	TBD	TBD
	TFCS size		6			
	Min spreading factor		64			
	Max number of DPDCH data bits/radio frame		600			
Puncturing Limit		1				

##### 5.4.1.2.4.2. Downlink

DPCH Downlink	RAB or SRB, TrCh		<b>Conversational / speech / 12.2 kbps / CS RAB, DCH</b>			<b>3.4 kbps SRBs for DCCH, DCH</b>
			RAB subflow #1	RAB subflow #2	RAB subflow #3	
	RM attribute		TBD	TBD	TBD	TBD
	TFCS size		6			
	DTX position		Fixed			
	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				

#### 5.4.1.2.5. Conversational / speech / UL:10.2 DL:10.2 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

##### 5.4.1.2.5.1. Uplink

DPCH Uplink	RAB or SRB, TrCh		<b>Conversational / speech 10.2 kbps / CS RAB</b>			<b>3.4 kbps SRBs for DCCH, DCH</b>
			RAB subflow #1	RAB subflow #2	RAB subflow #3	
	RM attribute		TBD	TBD	TBD	TBD
	TFCS size		6			
	Min spreading factor		64			
	Max number of DPDCH data bits/radio frame		600			
Puncturing Limit		1				

**5.4.1.2.5.2. Downlink**

	RAB or SRB, TrCh	Conversational / speech / 10.2 kbps / CS RAB, DCH			3.4 kbps SRBs for DCCH, DCH	
		RAB subflow #1	RAB subflow #2	RAB subflow #3		
DPCH Downlink	RM attribute	TBD	TBD	TBD	TBD	
	TFCS size	6				
	DTX position	Fixed				
	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			

**5.4.1.2.6. Conversational / speech / UL:7.95 DL:7.95 kbps / CS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH****5.4.1.2.6.1. Uplink**

	RAB or SRB, TrCh	Conversational / speech / 7.95 kbps / CS RAB, DCH		3.4 kbps SRBs for DCCH, DCH
		RAB subflow #1	RAB subflow #2	
DPCH Uplink	RM attribute	TBD	TBD	TBD
	TFCS size	6		
	Min spreading factor	64		
	Max number of DPDCH data bits/radio frame	600		
	Puncturing Limit	1		

**5.4.1.2.6.2. Downlink**

	RAB or SRB, TrCh	Conversational / speech / 7.95 kbps / CS RAB, DCH		3.4 kbps SRBs for DCCH, DCH	
		RAB subflow #1	RAB subflow #2		
DPCH Downlink	RM attribute	TBD	TBD	TBD	
	TFCS size	6			
	DTX position	Fixed			
	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		

**5.4.1.2.7. Conversational / speech / UL:7.4 DL:7.4 kbps / CS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH****5.4.1.2.7.1. Uplink**

	RAB or SRB, TrCh	Conversational / speech / 7.4 kbps / CS RAB, DCH		3.4 kbps SRBs for DCCH, DCH
		RAB subflow #1	RAB subflow #2	
DPCH Uplink	RM attribute	TBD	TBD	TBD
	TFCS size	6		

	Min spreading factor	64
	Max number of DPDCH data bits/radio frame	600
	Puncturing Limit	1

**5.4.1.2.7.2. Downlink**

	RAB or SRB, TrCh	Conversational / speech / 7.4 kbps / CS RAB		3.4 kbps SRBs for DCCH	
		RAB subflow #1	RAB subflow #2		
DPCH Downlink	RM attribute	TBD	TBD	TBD	
	TFCS size	6			
	DTX position	Fixed			
	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		

**5.4.1.2.8. Conversational / speech / UL:6.7 DL:6.7 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH**

**5.4.1.2.8.1. Uplink**

	RAB or SRB, TrCh	Conversational / speech / 6.7 kbps / CS RAB, DCH		3.4 kbps SRBs for DCCH, DCH
		RAB subflow #1	RAB subflow #2	
DPCH Uplink	RM attribute	TBD	TBD	TBD
	TFCS size	6		
	Min spreading factor	64		
	Max number of DPDCH data bits/radio frame	600		
	Puncturing Limit	1		

**5.4.1.2.8.2. Downlink**

	RAB or SRB, TrCh	Conversational / speech / 6.7 kbps / CS RAB, DCH		3.4 kbps SRBs for DCCH, DCH	
		RAB subflow #1	RAB subflow #2		
DPCH Downlink	RM attribute	TBD	TBD	TBD	
	TFCS size	6			
	DTX position	Fixed			
	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		

**5.4.1.2.9. Conversational / speech / UL:5.9 DL:5.9 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH**

**5.4.1.2.9.1. Uplink**

	RAB or SRB, TrCh	Conversational / speech / 5.9 kbps / CS RAB, DCH		3.4 kbps SRBs for DCCH, DCH
		RAB subflow #1	RAB subflow #2	
DPCH Uplink	RM attribute	TBD	TBD	TBD
	TFCS size	6		
	Min spreading factor	64		
	Max number of DPDCH data bits/radio frame	600		
	Puncturing Limit	1		

**5.4.1.2.9.2. Downlink**

	RAB or SRB, TrCh	Conversational / speech / 5.9 kbps / CS RAB, DCH		3.4 kbps SRBs for DCCH, DCH	
		RAB subflow #1	RAB subflow #2		
DPCH Downlink	RM attribute	TBD	TBD	TBD	
	TFCS size	6			
	DTX position	Fixed			
	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		

**5.4.1.2.10. Conversational / speech / UL:5.15 DL:5.15 kbps / CS RAB  
+ UL:1.7 DL:1.7 kbps SRBs for DCCH**

**5.4.1.2.10.1. Uplink**

	RAB or SRB, TrCh	Conversational / speech / 5.15 kbps / CS RAB, DCH		1.7 kbps SRBs for DCCH, DCH
		RAB subflow #1	RAB subflow #2	
DPCH Uplink	RM attribute	TBD	TBD	TBD
	TFCS size	6		
	Min spreading factor	128		
	Max number of DPDCH data bits/radio frame	300		
	Puncturing Limit	1		

**5.4.1.2.10.2. Downlink**

	RAB or SRB, TrCh	Conversational / speech / 5.15 kbps / CS RAB, DCH		1.7 kbps SRBs for DCCH, DCH	
		RAB subflow #1	RAB subflow #2		
DPCH Downlink	RM attribute	TBD	TBD	TBD	
	TFCS size	6			
	DTX position	Fixed			
	Spreading factor	256			
	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	14		
		Number of data bits/frame	210		

**5.4.1.2.11. Conversational / speech / UL:4.75 DL:4.75 kbps / CS RAB  
+ UL:1.7 DL:1.7 kbps SRBs for DCCH**

**5.4.1.2.11.1. Uplink**

DPCH Uplink	RAB or SRB, TrCh	Conversational / speech / 4.75 kbps / CS RAB, DCH		1.7 kbps SRBs for DCCH, DCH
		RAB subflow #1	RAB subflow #2	
	RM attribute	TBD	TBD	TBD
	TFCS size	6		
	Min spreading factor	128		
	Max number of DPDCH data bits/radio frame	300		
	Puncturing Limit	1		

**5.4.1.2.11.2. Downlink**

DPCH Downlink	RAB or SRB, TrCh	Conversational / speech / 4.75 kbps / CS RAB, DCH		1.7 kbps SRBs for DCCH, DCH
		RAB subflow #1	RAB subflow #2	
	RM attribute	TBD	TBD	TBD
	TFCS size	6		
	DTX position	Fixed		
	Spreading factor	256		
	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	14	
		Number of data bits/frame	210	

**5.4.1.2.12. Conversational / unknown / UL:64 DL:64 kbps / CS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH**

**5.4.1.2.12.1. Uplink**

DPCH Uplink	RAB or SRB, TrCh	Conversational / unknown / 64 kbps / CS RAB, DCH	3.4 kbps SRB for DCCH, DCH
		RM attribute	TBD
	TFCS size	4	
	Min spreading factor	16	
	Max number of DPDCH data bits/radio frame	2400	
	Puncturing Limit	1	

**5.4.1.2.12.2. Downlink**

DPCH Downlink	RAB or SRB, TrCh	Conversational / unknown / 64 kbps / CS RAB, DCH	3.4 kbps SRB for DCCH, DCH
		RM attribute	TBD
	TFCS size	4	
	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
		36	

	DPDCH	Number of data bits/slot	140
		Number of data bits/frame	2100

**5.4.1.2.13. Conversational / unknown / UL:32 DL:32 kbps / CS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH**

**5.4.1.2.13.1. Uplink**

DPCH Uplink	RAB or SRB, TrCh		<b>Conversational / unknown / 32 kbps / CS RAB, DCH</b>	<b>3.4 kbps SRB for DCCH, DCH</b>
	RM attribute		TBD	TBD
	TFCS size			4
	Min spreading factor			32
	Max number of DPDCH data bits/radio frame			1200
	Puncturing Limit			1

**5.4.1.2.13.2. Downlink**

DPCH Downlink	RAB or SRB, TrCh		<b>Conversational / unknown / 32 kbps / CS RAB, DCH</b>	<b>3.4 kbps SRB for DCCH, DCH</b>
	RM attribute		TBD	TBD
	TFCS size			4
	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

**5.4.1.2.14. Streaming / unknown / UL:28.8/DL:28.8 kbps / CS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH**

**5.4.1.2.14.1. Uplink**

DPCH Uplink	RAB or SRB, TrCh		<b>Streaming / unknown / 28.8 kbps / CS RAB, DCH</b>	<b>3.4 kbps SRB for DCCH, DCH</b>
	RM attribute		TBD	TBD
	TFCS size			6
	Min spreading factor			32
	Max number of DPDCH data bits/radio frame			1200
	Puncturing Limit			1

**5.4.1.2.14.2. Downlink**

DPCH Downlink	RAB or SRB, TrCh		<b>Streaming / unknown / 28.8 kbps / CS RAB, DCH</b>	<b>3.4 kbps SRB for DCCH, DCH</b>
	RM attribute		TBD	TBD
	TFCS size			6
	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

**5.4.1.2.15. Streaming / unknown / UL:57.6/DL:57.6 kbps / CS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH**

**5.4.1.2.15.1. Uplink**

DPCH Uplink	RAB or SRB, TrCh	Streaming / unknown / 57.6 kbps / CS RAB, DCH	3.4 kbps SRB for DCCH, DCH
	RM attribute	TBD	TBD
	TFCS size	10	
	Min spreading factor	16	
	Max number of DPDCH data bits/radio frame	2400	
	Puncturing Limit	1	

**5.4.1.2.15.2. Downlink**

DPCH Downlink	RAB or SRB, TrCh	Streaming / unknown / 57.6 kbps / CS RAB, DCH	3.4 kbps SRB for DCCH, DCH	
	RM attribute	TBD	TBD	
	TFCS size	10		
	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	

**5.4.1.2.16. Streaming / unknown / UL:0 DL:64 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH**

**5.4.1.2.16.1. Uplink**

See 5.4.1.2.2.1.

**5.4.1.2.16.2. Downlink**

TBD

**5.4.1.2.17. Streaming / unknown / UL:0 DL:128 kbps / CS or PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH**

**5.4.1.2.17.1. Uplink**

See 5.4.1.2.2.1.

**5.4.1.2.17.2. Downlink**

TBD

**5.4.1.2.18. Streaming / unknown / UL:0 DL:384 kbps / CS or PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH**

**5.4.1.2.18.1. Uplink**

See 5.4.1.2.2.1.

**5.4.1.2.18.2. Downlink**

TBD

**5.4.1.2.19. Interactive or background / UL:32 DL:8 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH****5.4.1.2.19.1. Uplink**

DPCH Uplink	RAB or SRB, TrCh	Interactive or background / 32 kbps / PS RAB, DCH	3.4 kbps SRB for DCCH, DCH
	RM attribute	TBD	TBD
	TFCS size	4	
	Min spreading factor	32	
	Max number of DPDCH data bits/radio frame	1200	
	Puncturing Limit	1	

**5.4.1.2.19.2. Downlink**

DPCH Downlink	RAB or SRB, TrCh	Interactive or background / 8 kbps / PS RAB, DCH	3.4 kbps SRB for DCCH, DCH	
	RM attribute	TBD	TBD	
	TFCS size	4		
	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	

**5.4.1.2.20. Interactive or background / UL:64 DL:8 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH****5.4.1.2.20.1. Uplink**

DPCH Uplink	RAB or SRB, TrCh	Interactive or background / 64 kbps / PS RAB, DCH	3.4 kbps SRB for DCCH, DCH
	RM attribute	TBD	TBD
	TFCS size	8	
	Min spreading factor	16	
	Max number of DPDCH data bits/radio frame	2400	
	Puncturing Limit	1	

**5.4.1.2.20.2. Downlink**

See 5.4.1.2.19.2.

**5.4.1.2.21. Interactive or background / UL:32 DL: 64 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH****5.4.1.2.21.1. Uplink**

See 5.4.1.2.19.1.

**5.4.1.2.21.2. Downlink**



DPCH Downlink	RAB or SRB, TrCh		<b>Interactive or background / 64 kbps / PS RAB, DCH</b>	<b>3.4 kbps SRB for DCCH, DCH</b>	
	RM attribute		TBD	TBD	
	TFCS size		8		
	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			

**5.4.1.2.22. Interactive or background / UL:64 DL: 64 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH**

**5.4.1.2.22.1. Uplink**

See 5.4.1.2.20.1.

**5.4.1.2.22.2. Downlink**

See 5.4.1.2.21.2.

**5.4.1.2.23. Interactive or background / UL:64 DL:128 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH**

**5.4.1.2.23.1. Uplink**

See 5.4.1.2.20.1.

**5.4.1.2.23.2. Downlink**

DPCH Downlink	RAB or SRB, TrCh		<b>Interactive or background / 128 kbps / PS RAB, DCH</b>	<b>3.4 kbps SRB for DCCH, DCH</b>	
	RM attribute		TBD	TBD	
	TFCS size		10		
	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			

**5.4.1.2.24. Interactive or background / UL:128 DL:128 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH**

**5.4.1.2.24.1. Uplink**

DPCH Uplink	RAB or SRB, TrCh		<b>Interactive or background / 128 kbps / PS RAB, DCH</b>	<b>3.4 kbps SRB for DCCH, DCH</b>
	RM attribute		TBD	TBD
	TFCS size		10	
	Min spreading factor		8	
	Max number of DPDCH data bits/radio frame		4800	
	Puncturing Limit		1	

**5.4.1.2.24.2. Downlink**

See 5.4.1.2.23.2.

**5.4.1.2.25. Interactive or background / UL:64 DL:384 kbps / PS RAB  
+ UL:3.4 DL: 3.4 kbps SRBs for DCCH****5.4.1.2.25.1. Uplink**

See 5.4.1.2.20.1.

**5.4.1.2.25.2. Downlink**

DPCH Downlink	RAB or SRB, TrCh		Interactive or background / 384 kbps / PS RAB, DCH	3.4 kbps SRB for DCCH, DCH
	RM attribute		TBD	TBD
TFCS size		12(alt. 14)		
DTX position		Flexible		
Spreading factor		8		
Number of DPDCH		1		
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	

**5.4.1.2.26. Interactive or background / UL:128 DL:384 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH****5.4.1.2.26.1. Uplink**

See 5.4.1.2.24.1.

**5.4.1.2.26.2. Downlink**

See 5.4.1.2.25.2.

**5.4.1.2.27. Interactive or background / UL:384 DL:384 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH****5.4.1.2.27.1. Uplink**

DPCH Uplink	RAB or SRB, TrCh		Interactive or background / 384 kbps / PS RAB, DCH	3.4 kbps SRB for DCCH, DCH
	RM attribute		TBD	TBD
TFCS size		12(alt. 14)		
Min spreading factor		4		
Max number of DPDCH data bits/radio frame		9600		
Number of DPDCH		1		
Puncturing Limit		0.72		

**5.4.1.2.27.2. Downlink**

See 5.4.1.2.25.2.

**5.4.1.2.28. Interactive or background / UL:64 DL:2048 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH**

**5.4.1.2.28.1. Uplink**

See 5.4.1.2.20.1.

**5.4.1.2.28.2. Downlink**

DPCH Downlink	RAB or SRB, TrCh		<b>Interactive or background / 2048 kbps / PS RAB, DCH</b>	<b>3.4 kbps SRB for DCCH, DCH</b>	
	RM attribute		TBD	TBD	
	TFCS size		14(alt. 16)		
	DTX position		Flexible		
	Spreading factor		4		
	Number of DPCH		3		
	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		1248	
Number of data bits/frame		18720			

**5.4.1.2.29. Interactive or background / UL:128 DL:2048 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH****5.4.1.2.29.1. Uplink**

See 5.4.1.2.24.1.

**5.4.1.2.29.2. Downlink**

See 5.4.1.2.28.2.

**5.4.1.2.30. Interactive or background / UL:384 DL:2048 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH****5.4.1.2.30.1. Uplink**

See 5.4.1.2.27.1.

**5.4.1.2.30.2. Downlink**

See 5.4.1.2.28.2.

**5.4.1.2.31. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB  
+ Interactive or background / UL:32 DL:8 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH****5.4.1.2.31.1. Uplink**

DPCH Uplink	RAB or SRB, TrCh	<b>Conversational / speech / 12.2 kbps / CS RAB, DCH</b>			<b>Interactive or background / 32 kbps / PS RAB, DCH</b>	<b>3.4 kbps SRBs for DCCH, DCH</b>
		RAB subflow #1	RAB subflow #2	RAB subflow #3		
	RM attribute	TBD	TBD	TBD	TBD	TBD
	TFCS size	18				
	Min spreading factor	16				
	Max number of DPDCH data bits/radio frame	2400				

Puncturing Limit	1
------------------	---

**5.4.1.2.31.2. Downlink**

DPCH Downlink	RAB or SRB, TrCh	Conversational / speech / 12.2 kbps / CS RAB, DCH			Interactive or background / 8 kbps / PS RAB, DCH	3.4 kbps SRBs for DCCH, DCH
		RAB subflow #1	RAB subflow #2	RAB subflow #3		
	RM attribute	TBD	TBD	TBD	TBD	TBD
	TFCS size	18				
	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				

**5.4.1.2.32. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:32 DL:64 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH**

**5.4.1.2.32.1. Uplink**

See 5.4.1.2.31.1.

**5.4.1.2.32.2. Downlink**

DPCH Downlink	RAB or SRB, TrCh	Conversational / speech / 12.2 kbps / CS RAB, DCH			Interactive or background / 64 kbps / PS RAB, DCH	3.4 kbps SRBs for DCCH, DCH
		RAB subflow #1	RAB subflow #2	RAB subflow #3		
	RM attribute	TBD	TBD	TBD	TBD	TBD
	TFCS size	24				
	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				

**5.4.1.2.33. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:64 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH**

**5.4.1.2.33.1. Uplink**

DPCH Uplink	RAB or SRB, TrCh	Conversational / speech / 12.2 kbps / CS RAB, DCH	Interactive or background / 64 kbps / PS RAB, DCH	3.4 kbps SRBs for DCCH, DCH

		RAB subflow #1	RAB subflow #2	RAB subflow #3		
	RM attribute	TBD	TBD	TBD	TBD	TBD
	TFCS size	24				
	Min spreading factor	8				
	Max number of DPDCH data bits/radio frame	4800				
	Puncturing Limit	1				

**5.4.1.2.33.2. Downlink**

See 5.4.1.2.32.2.

**5.4.1.2.34. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB  
+ Interactive or background / UL:64 DL:128 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH**

**5.4.1.2.34.1. Uplink**

See 5.4.1.2.33.1.

**5.4.1.2.34.2. Downlink**

DPCH Downlink	RAB or SRB, TrCh		Conversational / speech / 12.2 kbps / CS RAB, DCH			Interactive or background / 128 kbps / PS RAB, DCH	3.4 kbps SRBs for DCCH, DCH	
			RAB subflow #1	RAB subflow #2	RAB subflow #3			
		RM attribute	TBD	TBD	TBD	TBD	TBD	
		TFCS size	30					
		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						

**5.4.1.2.35. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB  
+ Interactive or background / UL:64 DL:384 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH**

**5.4.1.2.35.1. Uplink**

See 5.4.1.2.33.1.

**5.4.1.2.35.2. Downlink**

DPCH Downlink	RAB or SRB, TrCh		Conversational / speech / 12.2 kbps / CS RAB, DCH			Interactive or background / 384 kbps / PS RAB, DCH	3.4 kbps SRBs for DCCH, DCH
			RAB subflow #1	RAB subflow #2	RAB subflow #3		
		RM attribute	TBD	TBD	TBD	TBD	TBD
	TFCS size	36(alt. 42)					

DTX position		Flexible
Spreading factor		8
Number of DPDCH		1
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

**5.4.1.2.36. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB**  
 + **Interactive or background / UL:128 DL:2048 kbps / PS RAB**  
 + **UL:3.4 DL:3.4 kbps SRBs for DCCH**

**5.4.1.2.36.1. Uplink**

DPCH Uplink	RAB or SRB, TrCh	Conversational / speech / 12.2 kbps / CS RAB, DCH			Interactive or background / 128 kbps / PS RAB, DCH	3.4 kbps SRBs for DCCH, DCH
		RAB subflow #1	RAB subflow #2	RAB subflow #3		
	RM attribute	TBD	TBD	TBD	TBD	TBD
	TFCS size	30				
	Min spreading factor	8				
	Max number of DPDCH data bits/radio frame	4800				
	Puncturing Limit	1				

**5.4.1.2.36.2. Downlink**

DPCH Downlink	RAB or SRB, TrCh	Conversational / speech / 12.2 kbps / CS RAB, DCH			Interactive or background / 2048 kbps / PS RAB, DCH	3.4 kbps SRBs for DCCH, DCH
		RAB subflow #1	RAB subflow #2	RAB subflow #3		
	RM attribute	TBD	TBD	TBD	TBD	TBD
	TFCS size	42(alt. 48)				
	DTX position	Flexible				
	Spreading factor	4				
	Number of DPDCH	3				
	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	1248			
		Number of data bits/frame	18720			

**5.4.1.2.37. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB**  
 + **Streaming / unknown / UL:57.6 DL:57.6 kbps / CS RAB**  
 + **UL:3.4 DL:3.4 kbps SRBs for DCCH**

**5.4.1.2.37.1. Uplink**

DPCH Uplink	RAB or SRB, TrCh	Conversational / speech / 12.2 kbps / CS RAB, DCH	Streaming / 57.6 kbps / CS RAB, DCH	3.4 kbps SRBs for DCCH, DCH
		45		

		RAB subflow #1	RAB subflow #2	RAB subflow #3		
	RM attribute	TBD	TBD	TBD	TBD	TBD
	TFCS size	30				
	Min spreading factor	16				
	Max number of DPDCH data bits/radio frame	2400				
	Puncturing Limit	1				

#### 5.4.1.2.37.2. Downlink

DPCH Downlink	RAB or SRB, TrCh	Conversational / speech / 12.2 kbps / CS RAB, DCH			Streaming / 57.6 kbps / CS RAB, DCH	3.4 kbps SRBs for DCCH, DCH
		RAB subflow #1	RAB subflow #2	RAB subflow #3		
	RM attribute	TBD	TBD	TBD	TBD	TBD
	TFCS size	30				
	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			

#### 5.4.1.2.38. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Streaming / unknown / UL:0 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

##### 5.4.1.2.38.1. Uplink

See 5.4.1.2.4.1.

##### 5.4.1.2.38.2. Downlink

TBD

#### 5.4.1.2.39. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Streaming / unknown / UL:0 DL:128 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

##### 5.4.1.2.39.1. Uplink

See 5.4.1.2.4.1.

##### 5.4.1.2.39.2. Downlink

TBD

#### 5.4.1.2.40. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Streaming / unknown / UL:0 DL:384 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

##### 5.4.1.2.40.1. Uplink

See 5.4.1.2.4.1.

**5.4.1.2.40.2. Downlink**

TBD

- 5.4.1.2.41. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB**
- + Conversational / unknown / UL:64 DL:64 kbps / CS RAB**
- + UL:3.4 DL:3.4 kbps SRBs for DCCH**

**5.4.1.2.41.1. Uplink**

DPCH Uplink	RAB or SRB, TrCh	Conversational / speech / 12.2 kbps / CS RAB, DCH			Conversational / unknown / 64 kbps / CS RAB, DCH	3.4 kbps SRBs for DCCH, DCH
		RAB subflow #1	RAB subflow #2	RAB subflow #3		
	RM attribute	TBD	TBD	TBD	TBD	TBD
	TFCS size	12				
	Min spreading factor	8				
	Max number of DPDCH data bits/radio frame	4800				
	Puncturing Limit	1				

**5.4.1.2.41.2. Downlink**

DPCH Downlink	RAB or SRB, TrCh	Conversational / speech / 12.2 kbps / CS RAB, DCH			Conversational / unknown / 64 kbps / CS RAB, DCH	3.4 kbps SRBs for DCCH, DCH
		RAB subflow #1	RAB subflow #2	RAB subflow #3		
	RM attribute	TBD	TBD	TBD	TBD	TBD
	TFCS size	12				
	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			

- 5.4.1.2.42. Conversational / unknown / UL:64 DL:64 kbps / CS RAB**
- + Conversational / unknown / UL:64 DL:64 kbps / CS RAB**
- + UL:3.4 DL:3.4 kbps SRBs for DCCH**

**5.4.1.2.42.1. Uplink**

DPCH Uplink	RAB or SRB, TrCh	Conversational / unknown / 64 kbps / CS RAB, DCH	Conversational / unknown / 64 kbps / CS RAB, DCH	3.4 kbps SRBs for DCCH, DCH
		TBD	TBD	
	RM attribute	TBD	TBD	TBD
	TFCS size	8		
	Min spreading factor	8		
	Max number of DPDCH data bits/radio frame	4800		
	Puncturing Limit	1		



**5.4.1.2.42.2. Downlink**

DPCH Downlink	RAB or SRB, TrCh	Conversational / unknown / 64 kbps / CS RAB, DCH	Conversational / unknown / 64 kbps / CS RAB, DCH	3.4 kbps SRBs for DCCH, DCH
	RM attribute		TBD	TBD
TFCS size		8		
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		

**5.4.1.2.43. Conversational / unknown / UL:64 DL:64 kbps / CS RAB  
+ Interactive or background / UL:64 DL:64 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH**

**5.4.1.2.43.1. Uplink**

DPCH Uplink	RAB or SRB, TrCh	Conversational / unknown / 64 kbps / CS RAB, DCH	Interactive or background / 64 kbps / PS RAB, DCH	3.4 kbps SRBs for DCCH, DCH
	RM attribute		TBD	TBD
TFCS size		16		
Min spreading factor		8		
Max number of DPDCH data bits/radio frame		4800		
Puncturing Limit		1		

**5.4.1.2.43.2. Downlink**

DPCH Downlink	RAB or SRB, TrCh	Conversational / unknown / 64 kbps / CS RAB, DCH	Interactive or background / 64 kbps / PS RAB, DCH	3.4 kbps SRBs for DCCH, DCH
	RM attribute		TBD	TBD
TFCS size		16		
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		

**5.4.1.2.44. Conversational / unknown / UL:64 DL:64 kbps / CS RAB  
+ Interactive or background / UL:64 DL:128 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH**

**5.4.1.2.44.1. Uplink**

See 5.4.1.2.43.1.

**5.4.1.2.44.2. Downlink**

		<b>Conversational / unknown / 64 kbps / CS RAB, DCH</b>	<b>Interactive or background / 128 kbps / PS RAB, DCH</b>	<b>3.4 kbps SRBs for DCCH, DCH</b>	
DPCH Downlink	RAB or SRB, TrCh				
	RM attribute	TBD	TBD	TBD	
	TFCS size	20			
	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			

**5.4.1.2.45. Conversational / unknown / UL:64 DL:64 kbps / CS RAB  
+ Interactive or background / UL:128 DL:128 kbps / PS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH**

**5.4.1.2.45.1. Uplink**

		<b>Conversational / unknown / 64 kbps / CS RAB, DCH</b>	<b>Interactive or background / 128 kbps / PS RAB, DCH</b>	<b>3.4 kbps SRBs for DCCH, DCH</b>
DPCH Uplink	RAB or SRB, TrCh			
	RM attribute	TBD	TBD	TBD
	TFCS size	20		
	Min spreading factor	4		
	Max number of DPDCH data bits/radio frame	9600		
	Puncturing Limit	1		

**5.4.1.2.45.2. Downlink**

See 5.4.1.2.44.2

**5.4.1.2.46. Interactive or background / UL:64 DL:128 kbps / PS RAB  
+ Streaming / unknown / UL:0 DL:64 kbps / CS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH**

**5.4.1.2.46.1. Uplink**

See 5.4.1.2.20.1.

**5.4.1.2.46.2. Downlink**

TBD

**5.4.1.2.47. Interactive or background / UL:64 DL:128 kbps / PS RAB  
+ Streaming / unknown / UL:0 DL:128 kbps / CS RAB  
+ UL:3.4 DL:3.4 kbps SRBs for DCCH**

**5.4.1.2.47.1. Uplink**

See 5.4.1.2.20.1.

**5.4.1.2.47.2. Downlink**

TBD

**5.4.2. Combinations on PDSCH and DPCH**

**5.4.2.1. Transport channel parameters for RABs and signalling RBs**

**5.4.2.1.1. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB**

See 5.4.1.1.1.

**5.4.2.1.2. Interactive or background / UL:64 DL:384 kbps / PS RAB**

See 5.4.1.1.22.

**5.4.2.1.3. Interactive or background / UL:64 DL:2048 kbps / PS RAB**

See 5.4.1.1.25.

**5.4.2.1.4. UL:3.4 DL: 3.4 kbps SRBs for DCCH**

See 5.4.1.1.29.

**5.4.2.2. Physical channel parameters for combinations of RABs and signalling RBs**

**5.4.2.2.1. Interactive or background / UL:64 DL:384 kbps / PS RAB  
+ UL:3.4 DL: 3.4 kbps SRBs for DCCH**

**5.4.2.2.1.1. Uplink**

See 5.4.1.2.20.1.

**5.4.2.2.1.2. Downlink**

PDSCH	RAB or SRB, TrCh		<b>Interactive or background / 384 kbps / PS RAB, DSCH</b>
	TFCS size		6(alt. 7)
	DTX position		N/A (SingleTrCH)
	Spreading factor		4
DPCH Downlink associated with PDSCH	RAB or SRB, TrCh		<b>3.4 kbps SRB for DCCH, DCH</b>
	DTX position		N/A (SingleTrCH)
	Minimum spreading factor		256
	DPCCH	Number of TFCI bits/slot	0
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	10
Number of data bits/frame		150	

**5.4.2.2.2. Interactive or background / UL:64 DL:2048 kbps / PS RAB  
+ UL:3.4 DL: 3.4 kbps SRBs for DCCH**

**5.4.2.2.2.1. Uplink**

See 5.4.1.2.20.1.

**5.4.2.2.2.2. Downlink**

PDSCH	RAB or SRB, TrCh		<b>Interactive or background / 2048 kbps / PS RAB, DSCH</b>
	TFCS size		7(alt. 8)
	DTX position		N/A (SingleTrCH)
	Spreading factor		4
DPCH Downlink associated with PDSCH	RAB or SRB, TrCh		<b>3.4 kbps SRB for DCCH, DCH</b>

DTX position		N/A (SingleTrCH)
Minimum spreading factor		256
DPCCH	Number of TFCI bits/slot	0
	Number of TPC bits/slot	2
	Number of Pilot bits/slot	8
DPDCH	Number of data bits/slot	10
	Number of data bits/frame	150

**5.4.2.2.3. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB**  
 + **Interactive or background / UL:64 DL:384 kbps / PS RAB**  
 + **UL:3.4 DL:3.4 kbps SRBs for DCCH**

**5.4.2.2.3.1. Uplink**

See 5.4.1.2.33.1.

**5.4.2.2.3.2. Downlink**

PDSCH	RAB or SRB, TrCh		<b>Interactive or background / 384 kbps / PS RAB, DSCH</b>			
	TFCS size		6(alt. 7)			
	DTX position		N/A (SingleTrCH)			
	Spreading factor		4			
DPCH Downlink	RAB or SRB, TrCh		<b>Conversational / speech / 12.2 kbps / CS RAB, DCH</b>			<b>3.4 kbps SRBs for DCCH. DCH</b>
			RAB subflow #1	RAB subflow #2	RAB subflow #3	
	RM attribute		TBD	TBD	TBD	TBD
	TFCS size		6			
	DTX position		Fixed			
	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				

**5.4.2.2.4. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB**  
 + **Interactive or background / UL:64 DL:2048 kbps / PS RAB**  
 + **UL:3.4 DL:3.4 kbps SRBs for DCCH**

**5.4.2.2.4.1. Uplink**

See 5.4.1.2.33.1.

**5.4.2.2.4.2. Downlink**

PDSCH	RAB or SRB, TrCh		<b>Interactive or background / 2048 kbps / PS RAB, DSCH</b>			
	TFCS size		7(alt. 8)			
	DTX position		N/A (SingleTrCH)			
	Spreading factor		4			
DPCH Downlink	RAB or SRB, TrCh		<b>Conversational / speech / 12.2 kbps / CS RAB, DCH</b>			<b>3.4 kbps SRBs for DCCH. DCH</b>
			RAB subflow #1	RAB subflow #2	RAB subflow #3	
	RM attribute		TBD	TBD	TBD	TBD
	TFCS size		6			

DTX position		Fixed
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

### 5.4.3. Combinations on SCCPCH

#### 5.4.3.1. Stand-alone signalling RB for PCCH

##### 5.4.3.1.1. Transport channel parameter

Higher layer	RAB/signalling RB		<b>SRB</b>
	User of Radio Bearer		RRC
RLC	Logical channel type		PCCH
	RLC mode		TM
	Payload sizes, bit		320
	Max data rate, bps		32000
	RLC header, bit		0
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		PCH
	TB sizes, bit		320
	TFS	TF1, bts	0
		TF0, bits	1x320
	TTI, ms		10
	Coding type		CC 1/2
	CRC, bit		16
	Max number of bits/TTI before rate matching		688

##### 5.4.3.1.2. Physical channel parameters

SCCPCH	TFCS size		2	
	DTX position		N/A (SingleTrCH)	
	Spreading factor		128	
	DPCCH	Number of TFCI bits/slot		0
		Number of Pilot bits/slot		0
		Number of data bits/slot		40
	DPDCH	Number of data bits/frame		600

### 5.4.3.2. Interactive/Background 32 kbps PS RAB + 50.4 kbps SRBs for CCCH + 13.6 kbps SRB for DCCH + SRB for BCCH

#### 5.4.3.2.1. Transport channel parameters

Higher layer	RAB/signalling RB	<b>RAB</b>	<b>SRB#1</b>	<b>SRB#2</b>	<b>SRB#3</b>	<b>SRB#4</b>	<b>SRB#5</b>	<b>SRB#6</b>	
	User of Radio Bearer	Interactive/Background RAB	RRC	RRC	RRC	NAS_DT High prio	NAS_DT Low prio	RRC	
RLC	Logical channel type	DTCH	CCCH	DCCH	DCCH	DCCH	DCCH	BCCH	
	RLC mode	AM	UM	UM	AM	AM	AM	TM	
	Payload sizes, bit	320	504	136	128	128	128	166	
	Max data rate, bps	32000	50400	13600	12800	12800	12800	16600	
	RLC header, bit	16	8	8	16	16	16	0	
MAC	MAC header, bit	24	8	24	24	24	24	2	
	MAC multiplexing	N/A	N/A	5 logical channel multiplexing					
Layer 1	TrCH type	FACH	FACH	FACH					
	TB sizes, bit	360	520	168					
	TFS	TF1, bits	0	0	0				
		TF0, bits	1x360	1x520	1x168				
	TTI, ms	10	10	10					
	Coding type	TC	CC 1/2	CC 1/2					
	CRC, bit	16	16	16					
	Max number of bits/TTI before rate matching	1140	1088	384					

#### 5.4.3.2.2. Physical channel parameters

SCCPCH	TFCS size	TBD	
	DTX position	Flexible	
	Spreading factor	64	
	DPCCH	Number of TFCI bits/slot	8
		Number of Pilot bits/slot	0
		Number of data bits/slot	72
	DPDCH	Number of data bits/frame	1080

### 5.4.3.3. Interactive/Background 32 kbps RAB + SRBs for PCCH + 50.4 kbps SRB for CCCH + 13.6 kbps SRB for DCCH + SRB for BCCH

#### 5.4.3.3.1. Transport channel parameters

Higher layer	RAB/signalling RB	<b>RAB</b>	<b>SRB#1</b>	<b>SRB#2</b>	<b>SRB#3</b>	<b>SRB#4</b>	<b>SRB#5</b>	<b>SRB#6</b>	<b>SRB#7</b>	
	User of Radio Bearer	Interactive / Background RAB	RRC	RRC	RRC	RRC	NAS_DT High prio	NAS_DT Low prio	RRC	
RLC	Logical channel type	DTCH	PCCH	CCCH	DCCH	DCCH	DCCH	DCCH	BCCH	
	RLC mode	AM	TM	UM	UM	AM	AM	AM	TM	
	Payload sizes, bit	320	320	504	136	128	128	128	166	
	Max data rate, bps	32000	32000	50400	13600	12800	12800	12800	16600	
	RLC header, bit	16	0	8	8	16	16	16	0	
MAC	MAC header, bit	24	0	8	24	24	24	24	2	
	MAC multiplexing	N/A	N/A	N/A	5 logical channel multiplexing					
Layer 1	TrCH type	FACH	PCH	FACH	FACH					
	TB sizes, bit	360	320	520	168					
	TFS	TF0, bits	0	0	0	0				
		TF1, bits	1x360	1x320	1x520	1x168				
	TTI, ms	10	10	10	10					
	Coding type	TC	CC 1/2	CC 1/2	CC 1/2					
	CRC, bit	16	16	16	16					
	Max number of bits/TTI before rate matching	1140	688	1088	384					

#### 5.4.3.3.2. Physical channel parameters

SCCPCH	TFCS size	TBD	
	DTX position	Flexible	
	Spreading factor	64	
	DPCCH	Number of TFCI bits/slot	8
		Number of Pilot bits/slot	0
		Number of data bits/slot	72
	DPDCH	Number of data bits/frame	1080



#### 5.4.4. Combinations on PRACH

##### 5.4.4.1. Interactive/Background 32 kbps PS RAB + 16.6 kbps SRB for CCCH + 13.6 kbps SRB for DCCH

###### 5.4.4.1.1. Transport channel parameter

Higher layer	RAB/signalling RB	<b>RAB</b>	<b>SRB#1</b>	<b>SRB#2</b>	<b>SRB#3</b>	<b>SRB#4</b>	<b>SRB#5</b>	
	User of Radio Bearer	Interactive/Background RAB	RRC	RRC	RRC	NAS_DT High prio	NAS_DT Low prio	
RLC	Logical channel type	DTCH	CCCH	DCCH	DCCH	DCCH	DCCH	
	RLC mode	AM	UM	UM	AM	AM	AM	
	Payload sizes, bit	320	166	136	128	128	128	
	Max data rate, bps	32000	16600	13600	12800	12800	12800	
	RLC header, bit	16	0	8	16	16	16	
MAC	MAC header, bit	24	2	24	24	24	24	
	MAC multiplexing	6 logical channel multiplexing						
Layer 1	TrCH type	RACH						
	TB sizes, bit	360	168	168	168	168	168	
	TFS	TF0, bits	0					
		TF1, bits	1x168					
		TF2, bits	1x360					
	TTI, ms	10						
	Coding type	CC 1/2						
	CRC, bit	16						
Max number of bits/TTI before rate matching	768	384	384	384	384	384		

###### 5.4.4.1.2. Physical channel parameters

PRACH	TFCS size	3
	DTX position	Flexible
	Minimum Spreading factor	32
	Max number of DPDCH data bits/radio frame	1200
	Puncturing Limit	1