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Summary

“Typical radio parameter sets” was revised in the ad hoc of ISG to correct errors and to fix TBD parameters. The attached document is the latest version (version 1.3) of “Typical radio parameter sets”, which was approved in ISG, to be submitted to the appropriate 3GPP TSGs and WGs. The major changes from the version 1.2 to version 1.3 are summarised in the appendix “Overview of Typical Radio Interface Parameter Sets version 1.3”.

Please note that the version 1.3 is now stable except for a following editorial error. There is no plan to revise the document in ISG except for corrections of editorial errors and serious technical errors.

An editorial error

In the following section, DCCH bit rate of 1.7kbps should be applied as the section title says. However, the subsections in these sections show DCCH bit rate of 3.4 kbps. These subsections should be corrected to show 1.7 kbps DCCH.

- 5.4.1.10 Conversational/Speech/UL 5.15 DL5.15 /CS RAB + UL1.7 DL1.7kbps SRB for DCCH
- 5.4.1.11 Conversational/Speech/UL 4.75 DL4.75 /CS RAB + UL1.7 DL1.7kbps SRB for DCCH

Typical Radio Interface Parameter Sets

Version 1.3

August 2000

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1. Scope

This document describes the typical parameter sets for layer 1 and 2 configurations preferred by operators to ensure interoperability. 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 in this document. It is expected that the prioritised parameter sets identified in this document will be reflected in the test specifications for UTRA FDD mobile handsets, forming the first class testing cases.

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

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.

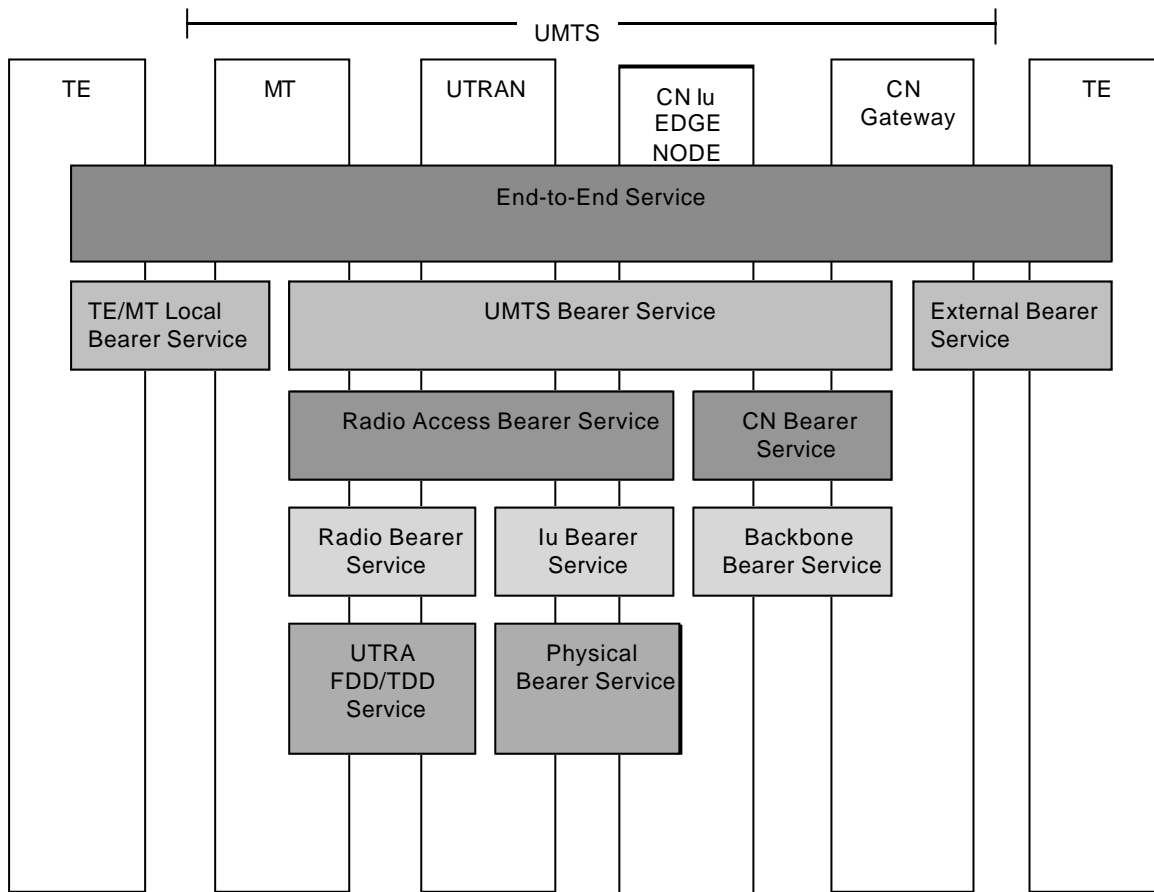


Figure 1: UMTS QoS Architecture

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
Fundamental characteristics	- 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
Example of the application	- 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 ^[3]	SSD ^[3]	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
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 or PS
16	Streaming	Unknown	UL:64 DL:0	CS or PS
17	Streaming	Unknown	UL:0 DL:128	CS or PS
18	Streaming	Unknown	UL:128 DL:0	CS or PS
19	Streaming	Unknown	UL:0 DL:384	CS or PS
20	Interactive or Background	N/A	UL:32 DL:8	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

Table 3: Signalling RBs

#	Maximum rate, kbps	Logical channel	PhyCh onto which SRBs are mapped
1	UL:1.7 DL:1.7	DCCH	DPCH
2	UL:3.4 DL:3.4	DCCH	DPCH
3	UL:13.6 DL:13.6	DCCH	DPCH
4	DL:27.2 (alt. 40.8)	DCCH	SCCPCH
5	UL:16.6	CCCH	PRACH
6	DL:30.4 (alt. 45.6)	CCCH	SCCPCH
7	DL:33.2 (alt. 49.8)	BCCH:	SCCPCH
8	DL:24 (alt. 6.4)	PCCH	SCCPCH

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.

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

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:28.8 DL:28.8 kbps / CS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 13) Conversational / unknown / UL:64 DL:64 kbps / CS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 14) Conversational / unknown / UL:32 DL:32 kbps / CS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 15) Streaming / unknown / UL:14.4/DL:14.4 kbps / CS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH

- 16) Streaming / unknown / UL:28.8/DL:28.8 kbps / CS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 17) Streaming / unknown / UL:57.6/DL:57.6 kbps / CS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 18) Streaming / unknown / UL:0 DL:64 kbps / CS or PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 19) Streaming / unknown / UL:64 DL:0 kbps / CS or PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 20) Streaming / unknown / UL:0 DL:128 kbps / CS or PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 21) Streaming / unknown / UL:128 DL:0 kbps / CS or PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 22) Streaming / unknown / UL:0 DL:384 kbps / CS or PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 23) Interactive or background / UL:32 DL:8 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 24) Interactive or background / UL:64 DL:8 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 25) Interactive or background / UL:32 DL: 64 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 26) Interactive or background / UL:64 DL: 64 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 27) Interactive or background / UL:64 DL:128 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 28) Interactive or background / UL:128 DL:128 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 29) Interactive or background / UL:64 DL:144 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 30) Interactive or background / UL:144 DL:144 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 31) Interactive or background / UL:64 DL:256 kbps / PS RAB
+ UL:3.4 DL: 3.4 kbps SRBs for DCCH
- 32) Interactive or background / UL:64 DL:384 kbps / PS RAB
+ UL:3.4 DL: 3.4 kbps SRBs for DCCH
- 33) Interactive or background / UL:128 DL:384 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 34) Interactive or background / UL:384 DL:384 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 35) Interactive or background / UL:64 DL:2048 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 36) Interactive or background / UL:128 DL:2048 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 37) Interactive or background / UL:384 DL:2048 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 38) 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
- 39) 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
- 40) 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
- 41) 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
- 42) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
+ Interactive or background / UL:64 DL:256 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH

- 43) 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
- 44) 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
- 45) 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
- 46) 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
- 47) 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
- 48) 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
- 49) 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
- 50) 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
- 51) 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
- 52) 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
- 53) 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
- 54) 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
- 55) 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:256 kbps / PS RAB
+ UL:3.4 DL: 3.4 kbps SRBs for DCCH
- 2) 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:256 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 4) 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) 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
+ SRB for CCCH
+ SRBs for DCCH
+ SRB for BCCH

- 3) Interactive or background / DL:32 kbps / PS RAB
 + SRB for PCCH
 + SRB for CCCH
 + SRBs for DCCH
 + SRB for BCCH

Combinations on PRACH

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

Traffic class ^[3]	RAB			Residual BER ^[3]	Services
	SSD ^[3]	Max. rate, kbps	CS/PS		
Conversational	Speech	UL:4.75-12.2 DL:4.75-12.2	CS	5×10^{-4} , 1×10^{-3} , 5×10^{-3}	AMR speech
Conversational	Unknown	UL:64 DL:64	CS	1×10^{-4} or 1×10^{-6}	UDI 1B, 64k 3G-324M ^[4]
Conversational	Unknown	UL:32 DL:32	CS	1×10^{-4} or 1×10^{-6}	32k 3G-324M ^[4]
Conversational	Unknown	UL:28.8 DL:28.8	CS	1×10^{-3}	Transparent modem
Streaming	Unknown	UL:14.4 DL:14.4	CS	1×10^{-3}	FAX ^[6]
Streaming	Unknown	UL:28.8 DL:28.8	CS	1×10^{-3}	FAX ^[6]
Streaming	Unknown	UL:57.6 DL:57.6	CS	1×10^{-3}	PIAFS 32 kbps Modem ^[6] , FTM ^[5] , PIAFS 64 kbps
Streaming	Unknown	UL:64-128 or DL:64-384	CS or PS	1×10^{-3} or 1×10^{-4}	Streaming video, uni-directional
Interactive or Background	N/A	UL:32-384 DL:8-2048	PS	1×10^{-3} or 1×10^{-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 radio parameter sets

5.4.1. Combinations on DPCH

5.4.1.1. Stand-alone UL:1.7 DL:1.7 kbps SRBs for DCCH

5.4.1.1.1. Uplink

5.4.1.1.1.1. Transport channel parameters

5.4.1.1.1.1.1. Transport channel parameters for UL:1.7 kbps SRBs for DCCH

Higher layer	RAB/signalling RB	SRB#1	SRB#2	SRB#3	SRB#4
	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, bits	0x148		
		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				

5.4.1.1.1.2. TFCS

<u>TFCS size</u>	<u>2</u>
<u>TFCS</u>	<u>SRBs for DCCH = TF0, TF1</u>

5.4.1.1.2. Physical channel parameters

DPCH Uplink	Min spreading factor	256
	Max number of DPDCH data bits/radio frame	150
	Puncturing Limit	1

5.4.1.1.2. Downlink

5.4.1.1.2.1. Transport channel parameters

5.4.1.1.2.1.1. Transport channel parameters for DL:1.7 kbps SRBs for DCCH

Higher layer	RAB/signalling RB	SRB#1	SRB#2	SRB#3	SRB#4
	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, bits	0x148		
		TF1, bits	1x148		
	TTI, ms	80			
	Coding type	CC 1/3			
	CRC, bit	16			
Max number of bits/TTI before rate matching	516				

5.4.1.1.2.1.2. TFCS

<u>TFCS size</u>	<u>2</u>
<u>TFCS</u>	<u>SRBs for DCCH = TF0, TF1</u>

5.4.1.1.2.2. Physical channel parameters

DPCH Downlink	DTX position		N/A (SingleTrCH)
	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. Stand-alone UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.2.1. Uplink

5.4.1.2.1.1. Transport channel parameters

5.4.1.2.1.1.1. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

Higher layer	RAB/signalling RB	SRB#1	SRB#2	SRB#3	SRB#4
	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, bits	0x148		
		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			
RM attribute	155-165				

5.4.1.2.1.1.2. TFCS

<u>TFCS size</u>	<u>2</u>
<u>TFCS</u>	<u>SRBs for DCCH = TF0, TF1</u>

5.4.1.2.1.2. Physical channel parameters

DPCH Uplink	Min spreading factor	256
	Max number of DPDCH data bits/radio frame	150
	Puncturing Limit	1

5.4.1.2.2. Downlink

5.4.1.2.2.1. Transport channel parameters

5.4.1.2.2.1.1. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

Higher layer	RAB/signalling RB	SRB#1	SRB#2	SRB#3	SRB#4
	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, bits	0x148
		TF1, bits	1x148
	TTI, ms	40	
	Coding type	CC 1/3	
	CRC, bit	16	
	Max number of bits/TTI before rate matching	516	
RM attribute	155-165		

5.4.1.2.2.1.2. TFCS

<u>TFCS size</u>	<u>2</u>
<u>TFCS</u>	<u>SRBs for DCCH = TF0, TF1</u>

5.4.1.2.2.2. Physical channel parameters

DPCH Downlink	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	48
	DPDCH	Number of data bits/slot	1440
Number of data bits/frame		210150	

5.4.1.3. Stand-alone UL:13.6 DL:13.6 kbps SRBs for DCCH

5.4.1.3.1. Uplink

5.4.1.3.1.1. Transport channel parameters

5.4.1.3.1.1.1. Transport channel parameters for UL:13.6 kbps SRBs for DCCH

Higher layer	RAB/signalling RB	SRB#1	SRB#2	SRB#3	SRB#4
	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, bits	0x148		
		TF1, bits	1x148		
	TTI, ms	10			
	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	516				

5.4.1.3.1.1.2. TFCS

<u>TFCS size</u>	<u>2</u>
<u>TFCS</u>	<u>SRBs for DCCH = TF0, TF1</u>

5.4.1.3.1.2. Physical channel parameters

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

5.4.1.3.2. Downlink

5.4.1.3.2.1. Transport channel parameters

5.4.1.3.2.1.1. Transport channel parameters for DL:13.6 kbps SRBs for DCCH

Higher layer	RAB/signalling RB	SRB#1	SRB#2	SRB#3	SRB#4
	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, bits	0x148
		TF1, bits	1x148
	TTI, ms		10
	Coding type		CC 1/3
	CRC, bit		16
Max number of bits/TTI before rate matching		516	

5.4.1.3.2.1.2. TFCS

<u>TFCS size</u>	<u>2</u>
<u>TFCS</u>	<u>SRBs for DCCH = TF0, TF1</u>

5.4.1.3.2.2. Physical channel parameters

DPCH Downlink	DTX position		N/A (SingleTrCH)	
	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		

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

5.4.1.4.1. Uplink

5.4.1.4.1.1. Transport channel parameters

5.4.1.4.1.1.1. Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB

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	<u>39, 81</u> (alt. 0, 39, 81)	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	<u>39, 81</u> (alt. 0, 39, 81)	0 , 103	0 , 60	
	TFS* ¹	TF0, bits	<u>0x81</u> (alt. 1x0*²)	<u>0x103</u> 1x0	<u>0x60</u> 1x0
		TF1, bits	1x39	1x <u>103</u> 0	1x <u>60</u> 0
		TF2, bits	1x81	<u>N/A</u> 1x103	<u>N/A</u> 1x60
	TTI, ms	20	20	20	
	Coding type	CC 1/3	CC 1/3	CC 1/2	
	CRC, bit	12	-N/A	-N/A	
	Max number of bits/TTI after channel coding	303	333	136	
	Uplink: Max number of bits/radio frame before rate matching	152	167	68	
RM attribute	180-220	170-210	215-256		

*1: The TrCH corresponding to RAB subflow #1 should be used as the guiding TrCH. (see section 4.3 in TS25.212) ~~TFs of a three RAB subflows are associated each other as stated in above table.~~

*2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see section 4.2.1.1 in TS25.212.).

5.4.1.4.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.1

5.4.1.4.1.1.3. TFCS

<u>TFCS size</u>	<u>6</u>
<u>TFCS</u>	<u>(RAB subflow#1, RAB subflow#2, RAB subflow#3, DCCH)= (TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0), (TF2, TF1, TF1, TF0), (TF0, TF0, TF0, TF1), (TF1, TF0, TF0, TF1), (TF2, TF1, TF1, TF1)</u>

5.4.1.4.1.3. Physical channel parameters

DPCH Uplink	Min spreading factor	64
	Max number of DPDCH data bits/radio frame	600
	Puncturing Limit	<u>0.88</u> 1

5.4.1.4.2. Downlink

5.4.1.4.2.1. Transport channel parameters

5.4.1.4.2.1.5.4.1.4.2.1.1. Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

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	0, 39, 81	0 -103	0 -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	0, 39, 81	0 -103	0 -60	
	TFS* ¹	TF0, bits	1x0* ²	0x103 1x0	0x60 1x0
		TF1, bits	1x39	1x 103 0	1x 60
		TF2, bits	1x81	N/A 1x103	N/A 1x60
	TTI, ms	20	20	20	
	Coding type	CC 1/3	CC 1/3	CC 1/2	
	CRC, bit	12	-N/A	-N/A	
	Max number of bits/TTI after channel coding	303	333	136	
	RM attribute	180-220	170-210	215-256	

*1: ~~The TrCH corresponding to RAB subflow #1 should be used as the guiding TrCH. (see section 4.3 in TS25.212) TFs of a three RAB subflows are associated each other as stated in above table.~~

*2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see section 4.2.1.1 in TS25.212.).

5.4.1.4.2.2.5.4.1.4.2.1.2. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.1.4.2.1.3. TFCS

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

5.4.1.4.2.3.5.4.1.4.2.2. Physical channel parameters

DPCH Downlink	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

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

5.4.1.5.1. Uplink

5.4.1.5.1.1. Transport channel parameters

5.4.1.5.1.1.1. Transport channel parameters for Conversational / speech / UL:10.2 kbps / CS RAB

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	0 , 99 <u>39, 65</u> <small>(alt. 0, 39, 65)</small>	0 , 99	0 , 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	0 , 99 <u>39, 65</u> <small>(alt. 0, 39, 65)</small>	0 , 99	0 , 40	
	TFS*1	TF0, bits	0x99 <u>0x65</u> (alt. 1x0*2)	0x99 <u>0x40</u>	0x40 <u>0x40</u>
		TF1, bits	1x39	1x 99	1x40
		TF2, bits	1x65	N/A <u>1x99</u>	N/A <u>1x40</u>
	TTI, ms	20	20	20	
	Coding type	CC 1/3	CC 1/3	CC 1/2	
	CRC, bit	12	N/A	N/A	
	Max number of bits/TTI after channel coding	255	321	96	
	Uplink: Max number of bits/radio frame before rate matching	128	161	48	
RM attribute	180-220	170-210	215-256		

*1: The TrCH corresponding to RAB subflow #1 should be used as the guiding TrCH. (see section 4.3 in TS25.212) ~~TFs of a three RAB subflows are associated each other as stated in above table.~~

*2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see section 4.2.1.1 in TS25.212.).

5.4.1.5.1.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.1

5.4.1.5.1.1.3. TFCS

<u>TFCS size</u>	<u>6</u>
<u>TFCS</u>	<u>(RAB subflow#1, RAB subflow#2, RAB subflow#3, DCCH)= (TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0), (TF2, TF1, TF1, TF0), (TF0, TF0, TF0, TF1), (TF1, TF0, TF0, TF1), (TF2, TF1, TF1, TF1)</u>

5.4.1.5.1.2. Physical channel parameters

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

5.4.1.5.2. Downlink

5.4.1.5.2.1. Transport channel parameters

5.4.1.5.2.1.5.4.1.5.2.1.1. Transport channel parameters for Conversational / speech / DL:10.2 kbps / CS RAB

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	0, 39, 65	0 ,99	0 ,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	0, 39, 65	0 ,99	0 ,40	
	TFS* ¹	TF0, bits	1x0* ²	0x99 1x0	0x40 1x0
		TF1, bits	1x39	1x 99 0	1x 40
		TF2, bits	1x65	N/A 1x99	N/A 1x40
	TTI, ms	20	20	20	
	Coding type	CC 1/3	CC 1/3	CC 1/2	
	CRC, bit	12	-N/A	-N/A	
	Max number of bits/TTI after channel coding	255	321	96	
	RM attribute	180-220	170-210	215-256	

*1: ~~The TrCH corresponding to RAB subflow #1 should be used as the guiding TrCH. (see section 4.3 in TS25.212) TFS of a three RAB subflows are associated each other as stated in above table.~~

*2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see section 4.2.1.1 in TS25.212.).

5.4.1.5.2.2.5.4.1.5.2.1.2. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.1.5.2.1.3. TFCS

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

5.4.1.5.2.3.5.4.1.5.2.2. Physical channel parameters

DPCH Downlink	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

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

5.4.1.6.1. Uplink

5.4.1.6.1.1. Transport channel parameters

5.4.1.6.1.1.1. Transport channel parameters for Conversational / speech / UL:7.95 kbps / CS RAB

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	
RLC	Logical channel type	DTCH		
	RLC mode	TM	TM	
	Payload sizes, bit	0 , 39, 75	0 , 84	
	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	0 , 39, 75	0 , 84	
	TFS* ¹	TF0, bits	0x75 (alt. 1x0*²)	0x84
		TF1, bits	1x39	1x84
		TF2, bits	1x75	1x84
	TTI, ms	20	20	
	Coding type	CC 1/3	CC 1/3	
	CRC, bit	12	N/A	
	Max number of bits/TTI after channel coding	285	276	
	Uplink: Max number of bits/radio frame before rate matching	143	138	
RM attribute	180-220	170-210		

*1: ~~The TrCH corresponding to RAB subflow #1 should be used as the guiding TrCH. (see section 4.3 in TS25.212) TFs of a three RAB subflows are associated each other as stated in above table.~~

*2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see section 4.2.1.1 in TS25.212.).

5.4.1.6.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.1.

5.4.1.6.1.1.3. TFCS

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

5.4.1.6.1.3. Physical channel parameters

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

5.4.1.6.2. Downlink

5.4.1.6.2.1. Transport channel parameters

5.4.1.6.2.1.1. Transport channel parameters for Conversational / speech / DL:7.95 kbps / CS RAB

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	
RLC	Logical channel type	DTCH		
	RLC mode	TM	TM	
	Payload sizes, bit	0, 39, 75	0 , 84	
	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	0, 39, 75	0 , 84	
	TFS* ¹	TF0, bits	1x0* ²	0x84 1x0
		TF1, bits	1x39	1x 84 0
		TF2, bits	1x75	N/A 1x84
	TTI, ms	20	20	
	Coding type	CC 1/3	CC 1/3	
	CRC, bit	12	N/A	
	Max number of bits/TTI after channel coding	285	276	
	RM attribute	180-220	170-210	

*1: : The TrCH corresponding to RAB subflow #1 should be used as the guiding TrCH. (see section 4.3 in TS25.212) ~~TFS of a three RAB subflows are associated each other as stated in above table.~~

*2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see section 4.2.1.1 in TS25.212.).

5.4.1.6.2.2 5.4.1.6.2.1.2. **Transport channel parameters for DL:3.4 kbps SRBs for DCCH**

See 5.4.1.2.2.1.1

5.4.1.6.2.1.3. TFCS

<u>TFCS size</u>	<u>6</u>
<u>TFCS</u>	<u>(RAB subflow#1, RAB subflow#2, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF2, TF1, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF2, TF1, TF1)</u>

5.4.1.6.2.3 5.4.1.6.2.2. **Physical channel parameters**

DPCH Downlink	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

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

5.4.1.7.1. Uplink

5.4.1.7.1.1. Transport channel parameters

5.4.1.7.1.1.1. Transport channel parameters for Conversational / speech / UL:7.4 kbps / CS RAB

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	
RLC	Logical channel type	DTCH		
	RLC mode	TM	TM	
	Payload sizes, bit	0 , 39, 61	0 , 87	
	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	0 , 39, 61	0 , 87	
	TFS* ¹	TF0, bits	1x0 ^{*2}	1x0
		TF1, bits	1x39	1x87
		TF2, bits	1x61	1x87
	TTI, ms	20	20	
	Coding type	CC 1/3	CC 1/3	
	CRC, bit	12	N/A	
	Max number of bits/TTI after channel coding	243	285	
	Uplink: Max number of bits/radio frame before rate matching	122	143	
RM attribute	180-220	170-210		

*1: The TrCH corresponding to RAB subflow #1 should be used as the guiding TrCH. (see section 4.3 in TS25.212) TFS of a three RAB subflows are associated each other as stated in above table.

*2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see section 4.2.1.1 in TS25.212.).

5.4.1.7.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.1

5.4.1.7.1.1.3. TFCS

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

5.4.1.7.1.3. Physical channel parameters

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

5.4.1.7.2. Downlink

5.4.1.7.2.1. Transport channel parameters

5.4.1.7.2.1.1. Transport channel parameters for Conversational / speech / DL:7.4 kbps / CS RAB

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	
RLC	Logical channel type	DTCH		
	RLC mode	TM	TM	
	Payload sizes, bit	0, 39, 61	0, 87	
	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	0, 39, 61	0, 87	
	TFS* ¹	TF0, bits	1x0* ²	0x87 1x0
		TF1, bits	1x39	1x 87 0
		TF2, bits	1x61	N/A 1x87
	TTI, ms	20	20	
	Coding type	CC 1/3	CC 1/3	
	CRC, bit	12	N/A	
	Max number of bits/TTI after channel coding	243	285	
RM attribute	180-220	170-210		

*1: : The TrCH corresponding to RAB subflow #1 should be used as the guiding TrCH. (see section 4.3 in TS25.212) ~~TFs of a three RAB subflows are associated each other as stated in above table.~~

*2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see section 4.2.1.1 in TS25.212.).

5.4.1.7.2.2.5.4.1.7.2.1.2. **Transport channel parameters for DL:3.4 kbps SRBs for DCCH**

See 5.4.1.2.2.1.1

5.4.1.7.2.1.3. **TFCS**

<u>TFCS size</u>	<u>6</u>
<u>TFCS</u>	<u>(RAB subflow#1, RAB subflow#2, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF2, TF1, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF2, TF1, TF1)</u>

5.4.1.7.2.3.5.4.1.7.2.2. **Physical channel parameters**

DPCH Downlink	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	

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

5.4.1.8.1. Uplink

5.4.1.8.1.1. Transport channel parameters

5.4.1.8.1.1.1. Transport channel parameters for Conversational / speech / UL:6.7 kbps / CS RAB

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	
RLC	Logical channel type	DTCH		
	RLC mode	TM	TM	
	Payload sizes, bit	0 , 39, 58	0 , 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	0 , 39, 58	0 , 76	
	TFS* ¹	TF0, bits	1x0 ^{*2}	1x0
		TF1, bits	1x39	1x76
		TF2, bits	1x58	1x76
	TTI, ms	20	20	
	Coding type	CC 1/3	CC 1/3	
	CRC, bit	12	N/A	
	Max number of bits/TTI after channel coding	234	252	
	Uplink: Max number of bits/radio frame before rate matching	117	126	
RM attribute	180-220	170-210		

*1: : The TrCH corresponding to RAB subflow #1 should be used as the guiding TrCH. (see section 4.3 in TS25.212)TFs of a three RAB subflows are associated each other as stated in above table.

*2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see section 4.2.1.1 in TS25.212.).

5.4.1.8.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.1

5.4.1.8.1.1.3. TFCS

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

5.4.1.8.1.3. Physical channel parameters

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

5.4.1.8.2. Downlink

5.4.1.8.2.1. Transport channel parameters

5.4.1.8.2.1.1. Transport channel parameters for Conversational / speech / DL:6.7 kbps / CS RAB

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	
RLC	Logical channel type	DTCH		
	RLC mode	TM	TM	
	Payload sizes, bit	0, 39, 58	0 , 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	0, 39, 58	0 , 76	
	TFS* ¹	TF0, bits	1x0* ²	0x76 1x0
		TF1, bits	1x39	1x 76 9
		TF2, bits	1x58	N/A 1x76
	TTI, ms	20	20	
	Coding type	CC 1/3	CC 1/3	
	CRC, bit	12	N/A	
	Max number of bits/TTI after channel coding	234	252	
RM attribute	180-220	170-210		

*1: : The TrCH corresponding to RAB subflow #1 should be used as the guiding TrCH. (see section 4.3 in TS25.212) ~~TFs of a three RAB subflows are associated each other as stated in above table.~~

*2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see section 4.2.1.1 in TS25.212.).

5.4.1.8.2.2 5.4.1.8.2.1.2. **Transport channel parameters for DL:3.4 kbps SRBs for DCCH**

See 5.4.1.2.2.1.1

5.4.1.8.2.1.3. TFCS

<u>TFCS size</u>	<u>6</u>
<u>TFCS</u>	<u>(RAB subflow#1, RAB subflow#2, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF2, TF1, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF2, TF1, TF1)</u>

5.4.1.8.2.3 5.4.1.8.2.2. **Physical channel parameters**

DPCH Downlink	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	

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

5.4.1.9.1. Uplink

5.4.1.9.1.1. Transport channel parameters

5.4.1.9.1.1.1. Transport channel parameters for Conversational / speech / UL:5.9 kbps / CS RAB

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	
RLC	Logical channel type	DTCH		
	RLC mode	TM	TM	
	Payload sizes, bit	39, 55 (alt. 0, 39, 55)	0, 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	39, 55 (alt. 0, 39, 55)	0, 63	
	TFS* ¹	TF0, bits	0x55 (alt. 1x0* ²)	0x63 1x0
		TF1, bits	1x39	1x 63 0
		TF2, bits	1x55	N/A 1x63
	TTI, ms	20	20	
	Coding type	CC 1/3	CC 1/3	
	CRC, bit	12	N/A	
	Max number of bits/TTI after channel coding	225	213	
	Uplink: Max number of bits/radio frame before rate matching	113	107	
RM attribute	180-220	170-210		

*1: : The TrCH corresponding to RAB subflow #1 should be used as the guiding TrCH. (see section 4.3 in TS25.212)TFs of a three RAB subflows are associated each other as stated in above table.

*2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see section 4.2.1.1 in TS25.212.).

5.4.1.9.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.1

5.4.1.9.1.1.3. TFCS

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

5.4.1.9.1.3. Physical channel parameters

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

5.4.1.9.2. Downlink

5.4.1.9.2.1. Transport channel parameters

5.4.1.9.2.1.1. Transport channel parameters for Conversational / speech / DL:5.9 kbps / CS RAB

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	
RLC	Logical channel type	DTCH		
	RLC mode	TM	TM	
	Payload sizes, bit	0, 39, 55	0 , 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	0, 39, 55	0 , 63	
	TFS* ¹	TF0, bits	1x0* ²	0x63 1x0
		TF1, bits	1x39	1x 63 0
		TF2, bits	1x55	N/A 1x63
	TTI, ms	20	20	
	Coding type	CC 1/3	CC 1/3	
	CRC, bit	12	N/A	
	Max number of bits/TTI after channel coding	225	213	
	RM attribute	180-220	170-210	

*1: : The TrCH corresponding to RAB subflow #1 should be used as the guiding TrCH. (see section 4.3 in TS25.212) ~~TFS of a three RAB subflows are associated each other as stated in above table.~~

*2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see section 4.2.1.1 in TS25.212.).

5.4.1.9.2.2.5.4.1.9.2.1.2. **Transport channel parameters for DL:3.4 kbps SRBs for DCCH**

See 5.4.1.2.2.1.1

5.4.1.9.2.1.3. **TFCS**

<u>TFCS size</u>	<u>6</u>
<u>TFCS</u>	<u>(RAB subflow#1, RAB subflow#2, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF2, TF1, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF2, TF1, TF1)</u>

5.4.1.9.2.3.5.4.1.9.2.2. **Physical channel parameters**

DPCH Downlink	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

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

5.4.1.10.1. Uplink

5.4.1.10.1.1. Transport channel parameters

5.4.1.10.1.1.1. Transport channel parameters for Conversational / speech / UL:5.15 kbps / CS RAB

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	
RLC	Logical channel type	DTCH		
	RLC mode	TM	TM	
	Payload sizes, bit	39, 49 (alt. 0, 39, 49)	0, 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	39, 49 (alt. 0, 39, 49)	0, 54	
	TFS* ¹	TF0, bits	0x49 (alt. 1x0* ²)	0x54 1x0
		TF1, bits	1x39	1x540
		TF2, bits	1x49	N/A 1x54
	TTI, ms	20	20	
	Coding type	CC 1/3	CC 1/3	
	CRC, bit	12	-N/A	
	Max number of bits/TTI after channel coding	207	186	
	Uplink: Max number of bits/radio frame before rate matching	104	93	
RM attribute	180-220	170-210		

*1: : The TrCH corresponding to RAB subflow #1 should be used as the guiding TrCH. (see section 4.3 in TS25.212)TFs of a three RAB subflows are associated each other as stated in above table.

*2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see section 4.2.1.1 in TS25.212.).

5.4.1.10.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.1

5.4.1.10.1.1.3. TFCS

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

5.4.1.10.1.3. Physical channel parameters

DPCH Uplink	Min spreading factor	128
	Max number of DPDCH data bits/radio frame	300
	Puncturing Limit	1

5.4.1.10.2. Downlink

5.4.1.10.2.1. Transport channel parameters

5.4.1.10.2.1.1. Transport channel parameters for Conversational / speech / DL:5.15 kbps / CS RAB

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	
RLC	Logical channel type	DTCH		
	RLC mode	TM	TM	
	Payload sizes, bit	0, 39, 49	0 , 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	0, 39, 49	0 , 54	
	TFS* ¹	TF0, bits	1x0	0x54 1x0
		TF1, bits	1x39	1x 54 0
		TF2, bits	1x49	N/A 1x54
	TTI, ms	20	20	
	Coding type	CC 1/3	CC 1/3	
	CRC, bit	12	N/A	
	Max number of bits/TTI after channel coding	207	186	
RM attribute	180-220	170-210		

*1: : The TrCH corresponding to RAB subflow #1 should be used as the guiding TrCH. (see section 4.3 in TS25.212) ~~TFs of a three RAB subflows are associated each other as stated in above table.~~

*2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see section 4.2.1.1 in TS25.212.).

5.4.1.10.2.2.5.4.1.10.2.1.2. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.1.10.2.1.3. TFCS

<u>TFCS size</u>	<u>6</u>
<u>TFCS</u>	<u>(RAB subflow#1, RAB subflow#2, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF2, TF1, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF2, TF1, TF1)</u>

5.4.1.10.2.3.5.4.1.10.2.2. Physical channel parameters

DPCH Downlink	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

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

5.4.1.11.1. Uplink

5.4.1.11.1.1. Transport channel parameters

5.4.1.11.1.1.1. Transport channel parameters for Conversational / speech / UL:4.75 kbps / CS RAB

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	
RLC	Logical channel type	DTCH		
	RLC mode	TM	TM	
	Payload sizes, bit	39, 42 (alt. 0, 39, 42)	0, 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	39, 42 (alt. 0, 39, 42)	0, 53	
	TFS* ¹	TF0, bits	0x42 (alt. 1x0* ²)	0x53 1x0
		TF1, bits	1x39	1x530
		TF2, bits	1x42	N/A 1x53
	TTI, ms	20	20	
	Coding type	CC 1/3	CC 1/3	
	CRC, bit	12	-N/A	
	Max number of bits/TTI after channel coding	186	183	
	Uplink: Max number of bits/radio frame before rate matching	93	92	
RM attribute	180-220	170-210		

*1: : The TrCH corresponding to RAB subflow #1 should be used as the guiding TrCH. (see section 4.3 in TS25.212) TFS of a three RAB subflows are associated each other as stated in above table.

*2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see section 4.2.1.1 in TS25.212.).

5.4.1.11.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.1

5.4.1.11.1.1.3. TFCS

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

5.4.1.11.1.3. Physical channel parameters

DPCH Uplink	Min spreading factor	128
	Max number of DPDCH data bits/radio frame	300
	Puncturing Limit	1

5.4.1.11.2. Downlink

5.4.1.11.2.1. Transport channel parameters

5.4.1.11.2.1.1. Transport channel parameters for Conversational / speech / DL:4.75 kbps / CS RAB

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	
RLC	Logical channel type	DTCH		
	RLC mode	TM	TM	
	Payload sizes, bit	0, 39, 42	0 , 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	0, 39, 42	0 , 53	
	TFS* ¹	TF0, bits	1x0* ²	0x53 1x0
		TF1, bits	1x39	1x 53 0
		TF2, bits	1x42	N/A 1x53
	TTI, ms	20	20	
	Coding type	CC 1/3	CC 1/3	
	CRC, bit	12	N/A	
	Max number of bits/TTI after channel coding	186	183	
RM attribute	180-220	170-210		

*1: : The TrCH corresponding to RAB subflow #1 should be used as the guiding TrCH. (see section 4.3 in TS25.212) ~~TFs of a three RAB subflows are associated each other as stated in above table.~~

*2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see section 4.2.1.1 in TS25.212.).

5.4.1.11.2.3.5.4.1.11.2.1.2. **Transport channel parameters for DL:3.4 kbps SRBs for DCCH**

See 5.4.1.2.2.1.1

5.4.1.11.2.1.3. TFCS

<u>TFCS size</u>	<u>6</u>
<u>TFCS</u>	<u>(RAB subflow#1, RAB subflow#2, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF2, TF1, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF2, TF1, TF1)</u>

5.4.1.11.2.3.5.4.1.11.2.2. **Physical channel parameters**

DPCH Downlink	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

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

5.4.1.12.1. Uplink

5.4.1.12.1.1. Transport channel parameters

5.4.1.12.1.1.1. Transport channel parameters for conversational / unknown / UL:28.8 kbps / CS RAB

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	0x576
		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	
RM attribute	160-200 TBD		

5.4.1.12.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.1

5.4.1.12.1.1.3. TFCS

<u>TFCS size</u>	6
<u>TFCS</u>	(28.8 kbps RAB_DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1)

5.4.1.12.1.3. Physical channel parameters

DPCH Uplink	Min spreading factor	32
	Max number of DPDCH data bits/radio frame	1200
	Puncturing Limit	0.92↓

5.4.1.12.2. Downlink

5.4.1.12.2.1. Transport channel parameters

5.4.1.12.2.1.1. Transport channel parameters for conversational / unknown / DL:28.8 kbps / CS RAB

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	0x576
		TF1, bits	1x576
		TF2, bits	2x576
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	3564	
RM attribute	160-200 TBD		

~~5.4.1.12.2.2~~ **5.4.1.12.2.1.2.** Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.1.12.2.1.3. TFCS

<u>TFCS size</u>	<u>6</u>
<u>TFCS</u>	<u>(28.8 kbps RAB, DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1)</u>

~~5.4.1.12.2.3~~ **5.4.1.12.2.2.** 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

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

5.4.1.13.1. Uplink

5.4.1.13.1.1. Transport channel parameters

5.4.1.13.1.1.1. Transport channel parameters for Conversational / unknown / UL:64 kbps / CS RAB

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	0x640
		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)	
RM attribute	150-195		

5.4.1.13.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.1

5.4.1.13.1.1.3. TFCS

TFCS size	4
TFCS	(64 kbps RAB, DCCH)=(TF0, TF0), (TF1, TF0), (TF0, TF1), (TF1, TF1)

5.4.1.13.1.3. Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	<u>0.924</u>

5.4.1.13.2. Downlink

5.4.1.13.2.1. Transport channel parameters

5.4.1.13.2.1.1. Transport channel parameters for Conversational / unknown / DL:64 kbps / CS RAB

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	0x640
		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)	
RM attribute	150-195		

5.4.1.13.2.2.5.4.1.13.2.1.2. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.1.13.2.1.3. TFCS

<u>TFCS size</u>	<u>4</u>
<u>TFCS</u>	<u>(64 kbps RAB, DCCH)=(TF0, TF0), (TF1, TF0), (TF0, TF1), (TF1, TF1)</u>

5.4.1.13.2.3.5.4.1.13.2.2. 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

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

5.4.1.14.1. Uplink

5.4.1.14.1.1. Transport channel parameters

5.4.1.14.1.1.1. Transport channel parameters for Conversational / unknown / UL:32 kbps / CS RAB

Higher layer	RAB/Signalling RB	RAB	
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	0x640
		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)	
RM attribute	165-210		

5.4.1.14.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.1

5.4.1.14.1.1.3. TFCS

<u>TFCS size</u>	<u>4</u>
<u>TFCS</u>	<u>(32 kbps RAB, DCCH)=(TF0, TF0), (TF1, TF0), (TF0, TF1), (TF1, TF1)</u>

5.4.1.14.1.3. Physical channel parameters

DPCH Uplink	Min spreading factor	32
	Max number of DPDCH data bits/radio frame	1200
	Puncturing Limit	0.8

5.4.1.14.2. Downlink

5.4.1.14.2.1. Transport channel parameters

5.4.1.14.2.1.1. Transport channel parameters for Conversational / unknown / DL:32 kbps / CS RAB

Higher layer	RAB/Signalling RB	RAB
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	0x640
		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)	
RM attribute	165-210		

5.4.1.14.2.2.5.4.1.14.2.1.2. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.1.14.2.1.3. TFCS

<u>TFCS size</u>	<u>4</u>
<u>TFCS</u>	<u>(32 kbps RAB, DCCH)=(TF0, TF0), (TF1, TF0), (TF0, TF1), (TF1, TF1)</u>

5.4.1.14.2.3.5.4.1.14.2.2. 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

5.4.1.15. Streaming / unknown / UL:14.4/DL:14.4 k bps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.15.1. Uplink

5.4.1.15.1.1. Transport channel parameters

5.4.1.15.1.1.1. Transport channel parameters for Streaming / unknown / UL: 14.4 kbps / CS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	TM	
	Payload sizes, bit	576	
	Max data rate, bps	14400 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	0x576
		TF1, bits	1x576
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	1788	
	Uplink: Max number of bits/radio frame before rate matching	447	
RM attribute	145-185 TBD		

5.4.1.15.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.1

5.4.1.15.1.1.3. TFCS

<u>TFCS size</u>	<u>4</u>
<u>TFCS</u>	<u>(14.4 kbps RAB, DCCH)=(TF0, TF0), (TF1, TF0), (TF0, TF1), (TF1, TF1)</u>

5.4.1.15.1.3. Physical channel parameters

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

5.4.1.15.2. Downlink

5.4.1.15.2.1. Transport channel parameters

5.4.1.15.2.1.1. Transport channel parameters for Streaming / unknown / DL:14.4 kbps / CS RAB

Higher layer	RAB/Signalling RB	RAB
RLC	Logical channel type	DTCH
	RLC mode	TM
	Payload sizes, bit	576
	Max data rate, bps	14400 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	0x576
		TF1, bits	1x576
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	1788	
RM attribute	145-185 TBD		

5.4.1.15.2.2.5.4.1.15.2.1.2. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.1.15.2.1.3. TFCS

<u>TFCS size</u>	<u>4</u>
<u>TFCS</u>	<u>(14.4 kbps RAB, DCCH)=(TF0, TF0), (TF1, TF0), (TF0, TF1), (TF1, TF1)</u>

5.4.1.15.2.3.5.4.1.15.2.2. 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	8
	DPDCH	Number of data bits/slot	28
		Number of data bits/frame	420

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

5.4.1.16.1. Uplink

5.4.1.16.1.1. Transport channel parameters

5.4.1.16.1.1.1. Transport channel parameters for Streaming / unknown / UL:28.8 kbps / CS RAB

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	0x576
		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	
RM attribute	135-175		

5.4.1.16.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.1

5.4.1.16.1.1.3. TFCS

<u>TFCS size</u>	<u>6</u>
<u>TFCS</u>	<u>(28.8kbps RAB, DCCH) = (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1)</u>

5.4.1.16.1.3. Physical channel parameters

DPCH Uplink	Min spreading factor	32
	Max number of DPDCH data bits/radio frame	1200
	Puncturing Limit	1

5.4.1.16.2. Downlink

5.4.1.16.2.1. Transport channel parameters

5.4.1.16.2.1.1. Transport channel parameters for Streaming / unknown / DL:28.8 kbps / CS RAB

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	0x576
		TF1, bits	1x576
		TF2, bits	2x576
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	3564	
RM attribute	135-175		

5.4.1.16.2.2.5.4.1.16.2.1.2. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.1.16.2.1.3. TFCS

<u>TFCS size</u>	<u>6</u>
<u>TFCS</u>	<u>(28.8kbps RAB, DCCH)=(TF0, TF0), (TF1, TF0), (TF2, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1)</u>

5.4.1.16.2.3.5.4.1.16.2.2. 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

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

5.4.1.17.1. Uplink

5.4.1.17.1.1. Transport channel parameters

5.4.1.17.1.1.1. Transport channel parameters for Streaming / unknown / UL:57.6 kbps / CS RAB

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	0x576
		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	
RM attribute	125-165		

5.4.1.17.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.1

5.4.1.17.1.1.3. TFCS

<u>TFCS size</u>	<u>10</u>
<u>TFCS</u>	<u>(57.6 kbps RAB, DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1)</u>

5.4.1.17.1.3. Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	1

5.4.1.17.2. Downlink

5.4.1.17.2.1. Transport channel parameters

5.4.1.17.2.1.1. Transport channel parameters for Streaming / unknown / DL:57.6 kbps / CS RAB

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	0x576
		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		
RM attribute	125-165		

5.4.1.17.2.2.5.4.1.17.2.1.2. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.1.17.2.1.3. TFCS

<u>TFCS size</u>	<u>10</u>
<u>TFCS</u>	<u>(57.6 kbps RAB, DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1)</u>

5.4.1.17.2.3.5.4.1.17.2.2. Physical channel parameters

DPCH Downlink	DTX position		Flexible
		Spreading factor	
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

5.4.1.18. Streaming / unknown / UL:0 DL:64 kbps / CS or PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.18.1. Uplink

5.4.1.18.1.1. Transport channel parameters

5.4.1.18.1.1.1. Transport channel parameters for Streaming / unknown / UL:0 kbps / CS or PS RAB

N/A

5.4.1.18.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.1

5.4.1.18.1.1.3. TFCS

See 5.4.1.2.1.1.2

5.4.1.18.1.2. Physical channel parameters

See 5.4.1.2.1.2

5.4.1.18.2. Downlink

5.4.1.18.2.1. Transport channel parameters

5.4.1.18.2.1.1. Transport channel parameters for Streaming / unknown / DL:64 kbps / CS or PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	TM	
	Payload sizes, bit	320	
	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	320	
	TFS	TF0, bits	0x320
		TF1, bits	1x320
		TF2, bits	2x320
		TF3, bits	4x320
		TF4, bits	8x320
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
Max number of bits/TTI after channel coding	8076		
RM attribute	<u>125-165</u> TBD		

5.4.1.18.2.2. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.1.18.2.1.3. TFCS

<u>TFCS size</u>	<u>10</u>
<u>TFCS</u>	<u>(64 kbps RAB, DCCH)=</u> <u>(TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0),</u> <u>(TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1)</u>

5.4.1.18.2.35.4.1.18.2.2. **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

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

5.4.1.19.1. Uplink

5.4.1.19.1.1. Transport channel parameters

5.4.1.19.1.1.1. Transport channel parameters for Streaming / unknown / UL:64 kbps / CS or PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	TM	
	Payload sizes, bit	320	
	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	320	
	TFS	TF0, bits	0x320
		TF1, bits	1x320
		TF2, bits	2x320
		TF3, bits	4x320
		TF4, bits	8x320
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	8076	
Uplink: Max number of bits/radio frame before rate matching	2019		
RM attribute	<u>125-165</u> TBD		

5.4.1.19.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.1

5.4.1.19.1.1.3. TFCS

TFCS size	<u>10</u>
TFCS	<u>(64 kbps RAB, DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1)</u>

5.4.1.19.1.3. Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	1

5.4.1.19.2. Downlink

5.4.1.19.2.1. Transport channel parameters

5.4.1.19.2.1.1. Transport channel parameters for Streaming / unknown / DL:0 kbps / CS or PS RAB

N/A

~~5.4.1.19.2.2~~**5.4.1.19.2.1.2.** Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.1.19.2.1.3. TFCS

See 5.4.1.2.2.1.2

~~5.4.1.19.2.3~~**5.4.1.19.2.2.** Physical channel parameters

See 5.4.1.2.2.2

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

5.4.1.20.1. Uplink

5.4.1.20.1.1. Transport channel parameters

5.4.1.20.1.1.5.4.1.20.1.1.1. Transport channel parameters for Streaming / unknown / UL:0 kbps / CS or PS RAB

N/A

5.4.1.20.1.2.5.4.1.20.1.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.1

5.4.1.20.1.1.3. TFCS

See 5.4.1.2.1.1.2

5.4.1.20.1.3.5.4.1.20.1.2. Physical channel parameters

See 5.4.1.2.1.2

5.4.1.20.2. Downlink

5.4.1.20.2.1. Transport channel parameters

5.4.1.20.2.1.5.4.1.20.2.1.1. Transport channel parameters for Streaming / unknown / DL:128 kbps / CS or PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	TM	
	Payload sizes, bit	320	
	Max data rate, bps	128000	
	RLC header, bit	0	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	320	
	TFS	TF0, bits	0x320
		TF1, bits	1x320
		TF2, bits	2x320
		TF3, bits	4x320
		TF4, bits	8x320
		TF5, bits	16x320
	TTI, ms	40	
	Coding type	TC	
CRC, bit	16		
Max number of bits/TTI after channel coding	16152		
RM attribute	<u>125-165 TBD</u>		

5.4.1.20.2.2.5.4.1.20.2.1.2. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.1.20.2.1.3. TFCS

<u>TFCS size</u>	<u>12</u>
<u>TFCS</u>	<u>(128 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)</u>

5.4.1.20.2.3.5.4.1.20.2.2. **Physical channel parameters**

DPCCH Downlink	DTX position		Flexible
		Spreading factor	
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

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

5.4.1.21.1. Uplink

5.4.1.21.1.1. Transport channel parameters

5.4.1.21.1.1.1. Transport channel parameters for Streaming / unknown / UL:128 kbps / CS or PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	TM	
	Payload sizes, bit	320	
	Max data rate, bps	128000	
	RLC header, bit	0	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	320	
	TFS	TF0, bits	0x320
		TF1, bits	1x320
		TF2, bits	2x320
		TF3, bits	4x320
		TF4, bits	8x320
		TF5, bits	16x320
	TTI, ms	40	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	16152	
	Uplink: Max number of bits/radio frame before rate matching	4038	
RM attribute	<u>125-165</u> TBD		

5.4.1.21.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.1

5.4.1.21.1.1.3. TFCS

<u>TFCS size</u>	<u>12</u>
<u>TFCS</u>	<u>(128 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)</u>

5.4.1.21.1.3. Physical channel parameters

DPCH Uplink	Min spreading factor	8
	Max number of DPDCH data bits/radio frame	4800
	Puncturing Limit	1

5.4.1.21.2. Downlink

5.4.1.21.2.1. Transport channel parameters

~~5.4.1.2.1.5~~5.4.1.2.1.1. **Transport channel parameters for Streaming / unknown / DL:0 kbps / CS or PS RAB**

N/A

~~5.4.1.2.2.5~~5.4.1.2.1.2. **Transport channel parameters for DL:3.4 kbps SRBs for DCCH**

See 5.4.1.2.1.1

5.4.1.2.1.3. TFCS

See 5.4.1.2.1.1

~~5.4.1.2.3~~5.4.1.2.2. **Physical channel parameters**

See 5.4.1.2.2

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

5.4.1.22.1. Uplink

5.4.1.22.1.1. Transport channel parameters

5.4.1.22.1.1.5.4.1.22.1.1.1. Transport channel parameters for Streaming / unknown / UL:0 kbps / CS or PS RAB

N/A

5.4.1.22.1.2.5.4.1.22.1.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.1

5.4.1.22.1.1.3. TFCS

See 5.4.1.2.1.1.2

5.4.1.22.1.3.5.4.1.22.1.2. Physical channel parameters

See 5.4.1.2.1.2

5.4.1.22.2. Downlink

5.4.1.22.2.1. Transport channel parameters

5.4.1.22.2.1.5.4.1.22.2.1.1. Transport channel parameters for Streaming / unknown / DL:384 kbps / CS or PS RAB

Higher layer	RAB/Signalling RB	RAB	
RLC	Logical channel type	DTCH	
	RLC mode	TM	
	Payload sizes, bit	320	
	Max data rate, bps	384000	
	RLC header, bit	0	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	
	TB sizes, bit	320	
	TFS	TF0, bits	0x320
		TF1, bits	1x320
		TF2, bits	2x320
		TF3, bits	4x320
		TF4, bits	8x320
		TF5, bits	16x320
		TF6, bits	32x320
	TF7, bits	48x320	
	TTI, ms	40	
	Coding type	TC	
CRC, bit	16		
Max number of bits/TTI after channel coding	48432		
RM attribute	<u>110-150TBD</u>		

5.4.1.22.2.2.5.4.1.22.2.1.2. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

5.4.1.2.2.1.1

5.4.1.22.2.1.3. TFCS

<u>TFCS size</u>	<u>16</u>
<u>TFCS</u>	<u>(384 kbps RAB, DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF5, TF0), (TF6, TF0), (TF7, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1), (TF5, TF1), (TF6, TF1), (TF7, TF1)</u>

5.4.1.22.2.3.5.4.1.22.2.2. Physical channel parameters

DPCH Downlink	DTX position		Flexible
	Spreading factor		8
	Number od 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

5.4.1.23. Interactive or background / UL:32 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.23.1. Uplink

5.4.1.23.1.1. Transport channel parameters

5.4.1.23.1.1.1. Transport channel parameters for Interactive or background / UL:32 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	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	0x336
		TF1, bits	1x336
		TF2, bits	2x336 (alt. TF2 is N/A)
	TTI, ms	20 (alt. 10)	
	Coding type	TC (alt. CC 1/3)	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	2124 (alt. 1080)	
	Uplink: Max number of bits/radio frame before rate matching	1062 (alt. 1080)	
RM attribute	135-175		

5.4.1.23.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.1

5.4.1.23.1.1.3. TFCS

<u>TFCS size</u>	<u>6 (alt. 4)</u>
<u>TFCS</u>	<u>(32 kbps RAB, DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1) (alt. (TF0, TF0), (TF1, TF0), (TF0, TF1), (TF1, TF1))</u>

5.4.1.23.1.3. Physical channel parameters

DPCH Uplink	Min spreading factor	32
	Max number of DPDCH data bits/radio frame	1200
	Puncturing Limit	<u>0.964</u>

5.4.1.23.2. Downlink

5.4.1.23.2.1. Transport channel parameters

5.4.1.23.2.1.1. Transport channel parameters for Interactive or background / DL: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	
	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	0x336
		TF1, bits	1x336
	TTI, ms	40	
	Coding type	TC (alt. CC 1/3)	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	1068 (alt. 1080)	
	RM attribute	135-175 TBD	

5.4.1.23.2.2.5.4.1.23.2.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.1.23.2.1.3. TFCS

<u>TFCS size</u>	4
<u>TFCS</u>	(8 kbps RAB, DCCH)=(TF0, TF0), (TF1, TF0), (TF0, TF1), (TF1, TF1)

5.4.1.23.2.3.5.4.1.23.2.2. Physical channel parameters

DPCH Downlink	DTX position		Flexible
		Spreading factor	
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

5.4.1.24. Interactive or background / UL:64 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.24.1. Uplink

5.4.1.24.1.1. Transport channel parameters

5.4.1.24.1.1.1. Transport channel parameters for Interactive or background / UL:64 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	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	0x336
		TF1, bits	1x336
		TF2, bits	2x336
		TF3, bits	3x336
		TF4, 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		
RM attribute	130-170		

5.4.1.24.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.1

5.4.1.24.1.1.3. TFCS

<u>TFCS size</u>	<u>10</u>
<u>TFCS</u>	<u>(64 kbps RAB, DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1)</u>

5.4.1.24.1.3. Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	1

5.4.1.24.2. Downlink

See 5.4.1.23.2

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

5.4.1.25.1. Uplink

See 5.4.1.23.1

5.4.1.25.2. Downlink

5.4.1.25.2.1. Transport channel parameters

5.4.1.25.2.1.5.4.1.25.2.1.1. Transport channel parameters for Interactive or background / DL:64 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	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	0x336
		TF1, bits	1x336
		TF2, bits	2x336
		TF3, bits	3x336
		TF4, bits	4x336
	TTI, ms	20	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	4236	
RM attribute	130-170		

5.4.1.25.2.2.5.4.1.25.2.1.2. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.1.25.2.1.3. TFCS

TFCS size	10
TFCS	(64 kbps RAB, DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1)

5.4.1.25.2.3.5.4.1.25.2.2. Physical channel parameters

	DTX position	Flexible	
DPCH Downlink	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

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

5.4.1.26.1. Uplink

See 5.4.1.24.1

5.4.1.26.2. Downlink

See 5.4.1.25.2

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

5.4.1.27.1. Uplink

See 5.4.1.24.1

5.4.1.27.2. Downlink

5.4.1.27.2.1. Transport channel parameters

5.4.1.27.2.1.5.4.1.27.2.1.1. Transport channel parameters for Interactive or background / DL:128 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	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	0x336
		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	
RM attribute	120-160		

5.4.1.27.2.2.5.4.1.27.2.1.2. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1.

5.4.1.27.2.1.3. TFCS

<u>TFCS size</u>	<u>10</u>
<u>TFCS</u>	<u>(128 kbps RAB, DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1)</u>

5.4.1.27.2.3.5.4.1.27.2.2. Physical channel parameters

	DTX position	Flexible	
DPCH Downlink	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

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

5.4.1.28.1. Uplink

5.4.1.28.1.1. Transport channel parameters

5.4.1.28.1.1.1. Transport channel parameters for Interactive or background / UL:128 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	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	0x336
		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		
RM attribute	120-160		

5.4.1.28.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.1

5.4.1.28.1.1.3. TFCS

<u>TFCS size</u>	<u>10</u>
<u>TFCS</u>	<u>(128 kbps RAB, DCCH) = (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1)</u>

5.4.1.28.1.3. Physical channel parameters

DPCH Uplink	Min spreading factor	8
	Max number of DPDCH data bits/radio frame	4800
	Puncturing Limit	1

5.4.1.28.2. Downlink

See 5.4.1.27.2

5.4.1.29. Interactive or background / UL:64 DL:144 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

5.4.1.29.1. Uplink

See 5.4.1.24.1

5.4.1.29.2. Downlink

5.4.1.29.2.1. Transport channel parameters

5.4.1.29.2.1.5.4.1.29.2.1.1. Transport channel parameters for Interactive or background / DL:144 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	144000	
	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	0x336
		TF1, bits	1x336
		TF2, bits	2x336
		TF3, bits	4 x336
		TF4, bits	8 x336
		TF5, bits	9x336
	TTI, ms	20	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	9516	
RM attribute	140-180TBD		

5.4.1.29.2.2.5.4.1.29.2.1.2. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.1.29.2.1.3. TFCS

<u>TFCS size</u>	<u>12</u>
<u>TFCS</u>	<u>(144 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)</u>

5.4.1.29.2.3.5.4.1.29.2.2. Physical channel parameters

DPCH Downlink	DTX position		Flexible
	DPCCH	Spreading factor	
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	

**5.4.1.30. Interactive or background / UL:144 DL:144 kbps / PS RAB
+ UL:3.4 DL: 3.4 kbps SRBs for DCCH**

5.4.1.30.1. Uplink

5.4.1.30.1.1. Transport channel parameters

5.4.1.30.1.1.1. Transport channel parameters for Interactive or background / UL:144 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	144000	
	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	0x336
		TF1, bits	1x336
		TF2, bits	2x336
		TF3, bits	4 x336
		TF4, bits	8 x336
		TF5, bits	9 x336
	TTI, ms	20	
	Coding type	TC	
	CRC, bit	16	
	Max number of bits/TTI after channel coding	9516	
	Uplink: Max number of bits/radio frame before rate matching	4758	
RM attribute	<u>140-180</u> TBD		

5.4.1.30.1.2.5.4.1.30.1.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.1

5.4.1.30.1.1.3. TFCS

<u>TFCS size</u>	<u>12</u>
<u>TFCS</u>	<u>(144 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)</u>

5.4.1.30.1.3.5.4.1.30.1.2. Physical channel parameters

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

5.4.1.30.2. Downlink

See 5.4.1.29.2

**5.4.1.31. Interactive or background / UL:64 DL:256 kbps / PS RAB
+ UL:3.4 DL: 3.4 kbps SRBs for DCCH**

5.4.1.31.1. Uplink

See 5.4.1.24.1

5.4.1.31.2. Downlink

5.4.1.31.2.1. Transport channel parameters

5.4.1.31.2.1.5.4.1.31.2.1.1. Transport channel parameters for Interactive or background / DL:256 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	384000	
	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	0x336
		TF1, bits	1x336
		TF2, bits	2x336
		TF3, bits	4 x336
		TF4, bits	8 x336
		(alt- TF5, bits)	N/A (alt. 12x336)
	(alt- TF6, bits)	N/A (alt. 16x336)	
	TTI, ms	10 (alt. 20)	
	Coding type	TC	
	CRC, bit	16	
Max number of bits/TTI after channel coding	8460(alt. 16920)		
RM attribute	135-175 TBD		

5.4.1.31.2.2.5.4.1.31.2.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.1.31.2.1.3. TFCS

<u>TFCS size</u>	<u>10 (alt.14)</u>
<u>TFCS</u>	<u>(256 kbps RAB, DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1) (alt. (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF5, TF0), (TF6, TF0) (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1), (TF5, TF1), (TF6, TF1))</u>

5.4.1.31.2.3.5.4.1.31.2.2. Physical channel parameters

DPCH Downlink	DTX position	Flexible	
	Spreading factor	8	
	Number od DPDCH	1	
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8

	DPDCH	Number of Pilot bits/slot	16
		Number of data bits/slot	608
		Number of data bits/frame	9120

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

5.4.1.32.1. Uplink

See 5.4.1.24.1

5.4.1.32.2. Downlink

5.4.1.32.2.1. Transport channel parameters

5.4.1.32.2.1.1. Transport channel parameters for Interactive or background / DL:384 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	384000	
	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	0x336
		TF1, bits	1x336
		TF2, bits	2x336
		TF3, bits	4 x336
		TF4, bits	8 x336
		TF5, bits	12x336
		(alt- TF6, bits)	N/A (alt. 16x336)
		(alt- TF7, bits)	N/A (alt. 20x336)
	(alt- TF8, bits)	N/A (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)		
RM attribute	110-150 TBD		

5.4.1.32.2.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.1.32.2.1.3. TFCS

TFCS size	<u>12 (alt.18)</u>
TFCS	<u>(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) (alt. (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF5, TF0), (TF6, TF0), (TF7, TF0), (TF8, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1), (TF5, TF1), (TF6, TF1), (TF7, TF1), (TF8, TF1))</u>

5.4.1.32.2.3. Physical channel parameters

DPCCH	DTX position	Flexible
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Downlink	Spreading factor	8
	Number od 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

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

5.4.1.33.1. Uplink

See 5.4.1.28.1

5.4.1.33.2. Downlink

See 5.4.1.32.2

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

5.4.1.34.1. Uplink

5.4.1.34.1.1. Transport channel parameters

5.4.1.34.1.1.1. Transport channel parameters for Interactive or background / UL:384 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	384000	
	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	0x336
		TF1, bits	1x336
		TF2, bits	2x336
		TF3, bits	4 x336
		TF4, bits	8 x336
		TF5, bits	12x336
		TF6, bits	16x336 (alt. N/A)
		TF7, bits	20x336 (alt. N/A)
	TF8, bits	24 x336 (alt. N/A)	
	TTI, ms	20 (alt. 10)	
	Coding type	TC	
	CRC, bit	16	
Max number of bits/TTI after channel coding	25368		
Uplink: Max number of bits/radio frame before rate matching	12684		
RM attribute	<u>110-150TBD</u>		

5.4.1.34.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.1

5.4.1.34.1.1.3. TFCS

<u>TFCS size</u>	<u>18 (alt.12)</u>
<u>TFCS</u>	<u>(384 kbps RAB, DCCH)≡ (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF5, TF0), (TF6, TF0), (TF7, TF0), (TF8, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1), (TF5, TF1), (TF6, TF1), (TF7, TF1), (TF8, TF1) (alt. (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF5, TF0) (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1), (TF5, TF1))</u>

5.4.1.34.1.3. Physical channel parameters

DPCH Uplink	Min spreading factor	4
	Max number of DPDCH data bits/radio frame	9600
	Number of DPDCH	1

	Puncturing Limit	0.72
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5.4.1.34.2. Downlink

See 5.4.1.32.2

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

5.4.1.35.1. Uplink

See 5.4.1.24.1

5.4.1.35.2. Downlink

5.4.1.35.2.1. Transport channel parameters

5.4.1.35.2.1.5.4.1.35.2.1.1. Transport channel parameters for Interactive or background / DL:2048 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	2048000	
	RLC 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	4 x656
		TF4, bits	8 x656
		TF5, bits	12x656
		TF6, bits	16x656
		TF7, bits	20x656
		TF8, bits	24x656
		TF9, bits	28x656
		TF10, bits	32x656
		(alt. TF11, bits)	N/A (alt. 36x656)
		(alt. TF12, bits)	N/A (alt. 40x656)
		(alt. TF13, bits)	N/A (alt. 44x656)
		(alt. TF14, bits)	N/A (alt. 48x656)
		(alt. TF15, bits)	N/A (alt. 52x656)
		(alt. TF16, bits)	N/A (alt. 56x656)
		(alt. TF17, bits)	N/A (alt. 60x656)
(alt. TF18, bits)	N/A (alt. 64x656)		
TTI, ms	10(alt. 20)		
Coding type	TC		
CRC, bit	16		
Max number of bits/TTI after channel coding	64572 (alt. 129132)		
RM attribute	<u>130-170</u> TBD		

5.4.1.35.2.2.5.4.1.35.2.1.2. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.1.35.2.1.3. TFCS

<u>TFCS size</u>	<u>22 (alt.38)</u>
<u>TFCS</u>	<u>(2048 kbps RAB, DCCH)≡</u>

	<u>(TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF5, TF0), (TF6, TF0), (TF7, TF0), (TF8, TF0), (TF9, TF0), (TF10, TF0),</u> <u>(TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1), (TF5, TF1), (TF6, TF1), (TF7, TF1), (TF8, TF1), (TF9, TF1), (TF10, TF1)</u> <u>(alt, TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF5, TF0), (TF6, TF0),</u> <u>(TF7, TF0), (TF8, TF0), (TF9, TF0), (TF10, TF0), (TF11, TF0), (TF12, TF0), (TF13, TF0),</u> <u>(TF14, TF0), (TF15, TF0), (TF16, TF0), (TF17, TF0), (TF18, TF0),</u> <u>(TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1), (TF5, TF1), (TF6, TF1), (TF7,</u> <u>TF1), (TF8, TF1), (TF9, TF1), (TF10, TF1), (TF11, TF0), (TF12, TF0), (TF13, TF0), (TF14,</u> <u>TF0), (TF15, TF0), (TF16, TF0), (TF17, TF0), (TF18, TF0))</u>
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5.4.1.35.2.3.5.4.1.35.2.2. Physical channel parameters

DPCCH Downlink	DTX position		Flexible
	Spreading factor		4
	Number of DPCCH		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

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

5.4.1.36.1. Uplink

See 5.4.1.28.1

5.4.1.36.2. Downlink

See 5.4.1.35.2

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

5.4.1.37.1. Uplink

See 5.4.1.34.1

5.4.1.37.2. Downlink

See 5.4.1.35.2

5.4.1.38. 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**

5.4.1.38.1. Uplink

5.4.1.38.1.1. Transport channel parameters

5.4.1.38.1.1.1. Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB

See 5.4.1.4.1.1.1

5.4.1.38.1.1.2. Transport channel parameters for Interactive or background / UL:32 kbps / PS RAB

See 5.4.1.23.1.1.1

5.4.1.38.1.1.3. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.1

5.4.1.38.1.1.4. TFCS

<u>TFCS size</u>	<u>18 (alt. 12)</u>
<u>TFCS</u>	<u>(RAB subflow#1, RAB subflow#2, RAB subflow#3, 32kbps RAB, DCCH)=</u> <u>(TF0, TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0, TF0), (TF2, TF1, TF1, TF0, TF0),</u> <u>(TF0, TF0, TF0, TF1, TF0), (TF1, TF0, TF0, TF1, TF0), (TF2, TF1, TF1, TF1, TF0),</u> <u>(TF0, TF0, TF0, TF2, TF0), (TF1, TF0, TF0, TF2, TF0), (TF2, TF1, TF1, TF2, TF0),</u> <u>(TF0, TF0, TF0, TF0, TF1), (TF1, TF0, TF0, TF0, TF1), (TF2, TF1, TF1, TF0, TF1),</u> <u>(TF0, TF0, TF0, TF1, TF1), (TF1, TF0, TF0, TF1, TF1), (TF2, TF1, TF1, TF1, TF1),</u> <u>(TF0, TF0, TF0, TF2, TF1), (TF1, TF0, TF0, TF2, TF1), (TF2, TF1, TF1, TF2, TF1)</u> <u>(alt. (TF0, TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0, TF0), (TF2, TF1, TF1, TF0, TF0),</u> <u>(TF0, TF0, TF0, TF1, TF0), (TF1, TF0, TF0, TF1, TF0), (TF2, TF1, TF1, TF1, TF0),</u> <u>(TF0, TF0, TF0, TF0, TF1), (TF1, TF0, TF0, TF0, TF1), (TF2, TF1, TF1, TF0, TF1),</u> <u>(TF0, TF0, TF0, TF1, TF1), (TF1, TF0, TF0, TF1, TF1), (TF2, TF1, TF1, TF1, TF1))</u>

5.4.1.38.1.4.5.4.1.38.1.2. Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	1

5.4.1.38.2. Downlink

5.4.1.38.2.1. Transport channel parameters

5.4.1.38.2.1.1. Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See 5.4.1.4.2.1.1

5.4.1.38.2.1.2. Transport channel parameters for Interactive or background / DL:8 kbps / PS RAB

See 5.4.1.23.2.1.1

5.4.1.38.2.1.3. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.1.38.2.1.4. TFCS

<u>TFCS size</u>	<u>12</u>
<u>TFCS</u>	<u>(RAB subflow#1, RAB subflow#2, RAB subflow#3, 8 kbps RAB, DCCH)= (TF0, TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0, TF0), (TF2, TF1, TF1, TF0, TF0), (TF0, TF0, TF0, TF1, TF0), (TF1, TF0, TF0, TF1, TF0), (TF2, TF1, TF1, TF1, TF0), (TF0, TF0, TF0, TF0, TF1), (TF1, TF0, TF0, TF0, TF1), (TF2, TF1, TF1, TF0, TF1), (TF0, TF0, TF0, TF1, TF1), (TF1, TF0, TF0, TF1, TF1), (TF2, TF1, TF1, TF1, TF1)</u>

5.4.1.38.2.4.5.4.1.38.2.2. 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

5.4.1.39. 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**

5.4.1.39.1. Uplink

See 5.4.1.38.1

5.4.1.39.2. Downlink

5.4.1.39.2.1. Transport channel parameters

5.4.1.39.2.1.5.4.1.39.2.1.1. Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See 5.4.1.4.2.1.1

5.4.1.39.2.2.5.4.1.39.2.1.2. Transport channel parameters for Interactive or background / DL:64 kbps / PS RAB

See 5.4.1.25.2.1.1

5.4.1.39.2.3.5.4.1.39.2.1.3. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.1.39.2.1.4. TFCS

<u>TFCS size</u>	<u>30</u>
<u>TFCS</u>	<u>(RAB subflow#1, RAB subflow#2, RAB subflow#3, 64 kbps RAB, DCCH)= (TF0, TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0, TF0), (TF2, TF1, TF1, TF0, TF0), (TF0, TF0, TF0, TF1, TF0), (TF1, TF0, TF0, TF1, TF0), (TF2, TF1, TF1, TF1, TF0), (TF0, TF0, TF0, TF2, TF0), (TF1, TF0, TF0, TF2, TF0), (TF2, TF1, TF1, TF2, TF0), (TF0, TF0, TF0, TF3, TF0), (TF1, TF0, TF0, TF3, TF0), (TF2, TF1, TF1, TF3, TF0), (TF0, TF0, TF0, TF4, TF0), (TF1, TF0, TF0, TF4, TF0), (TF2, TF1, TF1, TF4, TF0), (TF0, TF0, TF0, TF0, TF1), (TF1, TF0, TF0, TF0, TF1), (TF2, TF1, TF1, TF0, TF1), (TF0, TF0, TF0, TF1, TF1), (TF1, TF0, TF0, TF1, TF1), (TF2, TF1, TF1, TF1, TF1), (TF0, TF0, TF0, TF2, TF1), (TF1, TF0, TF0, TF2, TF1), (TF2, TF1, TF1, TF2, TF1), (TF0, TF0, TF0, TF3, TF1), (TF1, TF0, TF0, TF3, TF1), (TF2, TF1, TF1, TF3, TF1), (TF0, TF0, TF0, TF4, TF1), (TF1, TF0, TF0, TF4, TF1), (TF2, TF1, TF1, TF4, TF1)</u>

5.4.1.39.2.4.5.4.1.39.2.2. 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	

5.4.1.40. 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**

5.4.1.40.1. Uplink

5.4.1.40.1.1. Transport channel parameters

5.4.1.40.1.1.1. Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB

See 5.4.1.4.1.1.1

5.4.1.40.1.1.2. Transport channel parameters for Interactive or background / UL:64 kbps / PS RAB

See 5.4.1.24.1.1.1

5.4.1.40.1.1.3. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.1

5.4.1.40.1.1.4. TFCS

<u>TFCS size</u>	<u>30</u>
<u>TFCS</u>	<u>(RAB subflow#1, RAB subflow#2, RAB subflow#3, 64 kbps RAB , DCCH)= (TF0, TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0, TF0), (TF2, TF1, TF1, TF0, TF0), (TF0, TF0, TF0, TF1, TF0), (TF1, TF0, TF0, TF1, TF0), (TF2, TF1, TF1, TF1, TF0), (TF0, TF0, TF0, TF2, TF0), (TF1, TF0, TF0, TF2, TF0), (TF2, TF1, TF1, TF2, TF0), (TF0, TF0, TF0, TF3, TF0), (TF1, TF0, TF0, TF3, TF0), (TF2, TF1, TF1, TF3, TF0), (TF0, TF0, TF0, TF4, TF0), (TF1, TF0, TF0, TF4, TF0), (TF2, TF1, TF1, TF4, TF0), (TF0, TF0, TF0, TF0, TF1), (TF1, TF0, TF0, TF0, TF1), (TF2, TF1, TF1, TF0, TF1), (TF0, TF0, TF0, TF1, TF1), (TF1, TF0, TF0, TF1, TF1), (TF2, TF1, TF1, TF1, TF1), (TF0, TF0, TF0, TF2, TF1), (TF1, TF0, TF0, TF2, TF1), (TF2, TF1, TF1, TF2, TF1), (TF0, TF0, TF0, TF3, TF1), (TF1, TF0, TF0, TF3, TF1), (TF2, TF1, TF1, TF3, TF1), (TF0, TF0, TF0, TF4, TF1), (TF1, TF0, TF0, TF4, TF1), (TF2, TF1, TF1, TF4, TF1)</u>

5.4.1.40.1.1.4.5.4.1.40.1.2. Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	0.76 <u>0.88</u>

5.4.1.40.2. Downlink

See 5.4.1.39.2

5.4.1.41. 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**

5.4.1.41.1. Uplink

See 5.4.1.40.1

5.4.1.41.2. Downlink

5.4.1.41.2.1. Transport channel parameters

5.4.1.41.2.1.5.4.1.41.2.1.1. Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See 5.4.1.4.2.1.1

5.4.1.41.2.2.5.4.1.41.2.1.2. Transport channel parameters for Interactive or background / DL:128 kbps / PS RAB

See 5.4.1.27.2.1.1

5.4.1.41.2.3.5.4.1.41.2.1.3. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.1.41.2.1.4. TFCS

<u>TFCS size</u>	<u>30</u>
<u>TFCS</u>	<u>(RAB subflow#1, RAB subflow#2, RAB subflow#3, 128 kbps RAB, DCCH)= (TF0, TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0, TF0), (TF2, TF1, TF1, TF0, TF0), (TF0, TF0, TF0, TF1, TF0), (TF1, TF0, TF0, TF1, TF0), (TF2, TF1, TF1, TF1, TF0), (TF0, TF0, TF0, TF2, TF0), (TF1, TF0, TF0, TF2, TF0), (TF2, TF1, TF1, TF2, TF0), (TF0, TF0, TF0, TF3, TF0), (TF1, TF0, TF0, TF3, TF0), (TF2, TF1, TF1, TF3, TF0), (TF0, TF0, TF0, TF4, TF0), (TF1, TF0, TF0, TF4, TF0), (TF2, TF1, TF1, TF4, TF0), (TF0, TF0, TF0, TF0, TF1), (TF1, TF0, TF0, TF0, TF1), (TF2, TF1, TF1, TF0, TF1), (TF0, TF0, TF0, TF1, TF1), (TF1, TF0, TF0, TF1, TF1), (TF2, TF1, TF1, TF1, TF1), (TF0, TF0, TF0, TF2, TF1), (TF1, TF0, TF0, TF2, TF1), (TF2, TF1, TF1, TF2, TF1), (TF0, TF0, TF0, TF3, TF1), (TF1, TF0, TF0, TF3, TF1), (TF2, TF1, TF1, TF3, TF1), (TF0, TF0, TF0, TF4, TF1), (TF1, TF0, TF0, TF4, TF1), (TF2, TF1, TF1, TF4, TF1)</u>

5.4.1.41.2.4.5.4.1.41.2.2. 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

5.4.1.42. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
 + **Interactive or background / UL:64 DL:256 kbps / PS RAB**
 + **UL:3.4 DL:3.4 kbps SRBs for DCCH**

5.4.1.42.1. Uplink

See 5.4.1.40.1

5.4.1.42.2. Downlink

5.4.1.42.2.1. Transport channel parameters

5.4.1.42.2.1.5.4.1.42.2.1.1. Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See 5.4.1.4.2.1.1

5.4.1.42.2.2.5.4.1.42.2.1.2. Transport channel parameters for Interactive or background / DL:256 kbps / PS RAB

See 5.4.1.31.2.1.1

5.4.1.42.2.3.5.4.1.42.2.1.3. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.1.42.2.1.4. TFCS

<u>TFCS size</u>	30 (alt. 42)
<u>TFCS</u>	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 256 kbps RAB, DCCH)= (TF0, TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0, TF0), (TF2, TF1, TF1, TF0, TF0), (TF0, TF0, TF0, TF1, TF0), (TF1, TF0, TF0, TF1, TF0), (TF2, TF1, TF1, TF1, TF0), (TF0, TF0, TF0, TF2, TF0), (TF1, TF0, TF0, TF2, TF0), (TF2, TF1, TF1, TF2, TF0), (TF0, TF0, TF0, TF3, TF0), (TF1, TF0, TF0, TF3, TF0), (TF2, TF1, TF1, TF3, TF0), (TF0, TF0, TF0, TF4, TF0), (TF1, TF0, TF0, TF4, TF0), (TF2, TF1, TF1, TF4, TF0), (TF0, TF0, TF0, TF0, TF1), (TF1, TF0, TF0, TF0, TF1), (TF2, TF1, TF1, TF0, TF1), (TF0, TF0, TF0, TF1, TF1), (TF1, TF0, TF0, TF1, TF1), (TF2, TF1, TF1, TF1, TF1), (TF0, TF0, TF0, TF2, TF1), (TF1, TF0, TF0, TF2, TF1), (TF2, TF1, TF1, TF2, TF1), (TF0, TF0, TF0, TF3, TF1), (TF1, TF0, TF0, TF3, TF1), (TF2, TF1, TF1, TF3, TF1), (TF0, TF0, TF0, TF4, TF1), (TF1, TF0, TF0, TF4, TF1), (TF2, TF1, TF1, TF4, TF1) (alt. (TF0, TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0, TF0), (TF2, TF1, TF1, TF0, TF0), (TF0, TF0, TF0, TF1, TF0), (TF1, TF0, TF0, TF1, TF0), (TF2, TF1, TF1, TF1, TF0), (TF0, TF0, TF0, TF2, TF0), (TF1, TF0, TF0, TF2, TF0), (TF2, TF1, TF1, TF2, TF0), (TF0, TF0, TF0, TF3, TF0), (TF1, TF0, TF0, TF3, TF0), (TF2, TF1, TF1, TF3, TF0), (TF0, TF0, TF0, TF4, TF0), (TF1, TF0, TF0, TF4, TF0), (TF2, TF1, TF1, TF4, TF0), (TF0, TF0, TF0, TF5, TF0), (TF1, TF0, TF0, TF5, TF0), (TF2, TF1, TF1, TF5, TF0), (TF0, TF0, TF0, TF6, TF0), (TF1, TF0, TF0, TF6, TF0), (TF2, TF1, TF1, TF6, TF0), (TF0, TF0, TF0, TF0, TF1), (TF1, TF0, TF0, TF0, TF1), (TF2, TF1, TF1, TF0, TF1), (TF0, TF0, TF0, TF1, TF1), (TF1, TF0, TF0, TF1, TF1), (TF2, TF1, TF1, TF1, TF1), (TF0, TF0, TF0, TF2, TF1), (TF1, TF0, TF0, TF2, TF1), (TF2, TF1, TF1, TF2, TF1), (TF0, TF0, TF0, TF3, TF1), (TF1, TF0, TF0, TF3, TF1), (TF2, TF1, TF1, TF3, TF1), (TF0, TF0, TF0, TF4, TF1), (TF1, TF0, TF0, TF4, TF1), (TF2, TF1, TF1, TF4, TF1), (TF0, TF0, TF0, TF5, TF1), (TF1, TF0, TF0, TF5, TF1), (TF2, TF1, TF1, TF5, TF1), (TF0, TF0, TF0, TF6, TF1), (TF1, TF0, TF0, TF6, TF1), (TF2, TF1, TF1, TF6, TF1))

5.4.1.42.2.4.5.4.1.42.2.2. Physical channel parameters

DPCH	DTX position	Flexible
Downlink	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

**5.4.1.43. 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**

5.4.1.43.1. Uplink

See 5.4.1.40.1

5.4.1.43.2. Downlink

5.4.1.43.2.1. Transport channel parameters

5.4.1.43.2.1.5.4.1.43.2.1.1. Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See 5.4.1.4.2.1.1

5.4.1.43.2.2.5.4.1.43.2.1.2. Transport channel parameters for Interactive or background / DL:384 kbps / PS RAB

See 5.4.1.32.2.1.1

5.4.1.43.2.3.5.4.1.43.2.1.3. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.1.43.2.1.4. TFCS

<u>TFCS size</u>	36 (alt. 54)
<u>TFCS</u>	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 384 kbps RAB, DCCH)= <u>(TF0, TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0, TF0), (TF2, TF1, TF1, TF0, TF0),</u> <u>(TF0, TF0, TF0, TF1, TF0), (TF1, TF0, TF0, TF1, TF0), (TF2, TF1, TF1, TF1, TF0),</u> <u>(TF0, TF0, TF0, TF2, TF0), (TF1, TF0, TF0, TF2, TF0), (TF2, TF1, TF1, TF2, TF0),</u> <u>(TF0, TF0, TF0, TF3, TF0), (TF1, TF0, TF0, TF3, TF0), (TF2, TF1, TF1, TF3, TF0),</u> <u>(TF0, TF0, TF0, TF4, TF0), (TF1, TF0, TF0, TF4, TF0), (TF2, TF1, TF1, TF4, TF0),</u> <u>(TF0, TF0, TF0, TF5, TF0), (TF1, TF0, TF0, TF5, TF0), (TF2, TF1, TF1, TF5, TF0),</u> <u>(TF0, TF0, TF0, TF0, TF1), (TF1, TF0, TF0, TF0, TF1), (TF2, TF1, TF1, TF0, TF1),</u> <u>(TF0, TF0, TF0, TF1, TF1), (TF1, TF0, TF0, TF1, TF1), (TF2, TF1, TF1, TF1, TF1),</u> <u>(TF0, TF0, TF0, TF2, TF1), (TF1, TF0, TF0, TF2, TF1), (TF2, TF1, TF1, TF2, TF1),</u> <u>(TF0, TF0, TF0, TF3, TF1), (TF1, TF0, TF0, TF3, TF1), (TF2, TF1, TF1, TF3, TF1),</u> <u>(TF0, TF0, TF0, TF4, TF1), (TF1, TF0, TF0, TF4, TF1), (TF2, TF1, TF1, TF4, TF1),</u> <u>(TF0, TF0, TF0, TF5, TF1), (TF1, TF0, TF0, TF5, TF1), (TF2, TF1, TF1, TF5, TF1),</u> <u>(alt. (TF0, TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0, TF0), (TF2, TF1, TF1, TF0, TF0),</u> <u>(TF0, TF0, TF0, TF1, TF0), (TF1, TF0, TF0, TF1, TF0), (TF2, TF1, TF1, TF1, TF0),</u> <u>(TF0, TF0, TF0, TF2, TF0), (TF1, TF0, TF0, TF2, TF0), (TF2, TF1, TF1, TF2, TF0),</u> <u>(TF0, TF0, TF0, TF3, TF0), (TF1, TF0, TF0, TF3, TF0), (TF2, TF1, TF1, TF3, TF0),</u> <u>(TF0, TF0, TF0, TF4, TF0), (TF1, TF0, TF0, TF4, TF0), (TF2, TF1, TF1, TF4, TF0),</u> <u>(TF0, TF0, TF0, TF5, TF0), (TF1, TF0, TF0, TF5, TF0), (TF2, TF1, TF1, TF5, TF0),</u> <u>(TF0, TF0, TF0, TF6, TF0), (TF1, TF0, TF0, TF6, TF0), (TF2, TF1, TF1, TF6, TF0),</u> <u>(TF0, TF0, TF0, TF7, TF0), (TF1, TF0, TF0, TF7, TF0), (TF2, TF1, TF1, TF7, TF0),</u> <u>(TF0, TF0, TF0, TF8, TF0), (TF1, TF0, TF0, TF8, TF0), (TF2, TF1, TF1, TF8, TF0),</u> <u>(TF0, TF0, TF0, TF0, TF1), (TF1, TF0, TF0, TF0, TF1), (TF2, TF1, TF1, TF0, TF1),</u> <u>(TF0, TF0, TF0, TF1, TF1), (TF1, TF0, TF0, TF1, TF1), (TF2, TF1, TF1, TF1, TF1),</u> <u>(TF0, TF0, TF0, TF2, TF1), (TF1, TF0, TF0, TF2, TF1), (TF2, TF1, TF1, TF2, TF1),</u> <u>(TF0, TF0, TF0, TF3, TF1), (TF1, TF0, TF0, TF3, TF1), (TF2, TF1, TF1, TF3, TF1),</u> <u>(TF0, TF0, TF0, TF4, TF1), (TF1, TF0, TF0, TF4, TF1), (TF2, TF1, TF1, TF4, TF1),</u> <u>(TF0, TF0, TF0, TF5, TF1), (TF1, TF0, TF0, TF5, TF1), (TF2, TF1, TF1, TF5, TF1),</u> <u>(TF0, TF0, TF0, TF6, TF1), (TF1, TF0, TF0, TF6, TF1), (TF2, TF1, TF1, TF6, TF1),</u> <u>(TF0, TF0, TF0, TF7, TF1), (TF1, TF0, TF0, TF7, TF1), (TF2, TF1, TF1, TF7, TF1),</u> <u>(TF0, TF0, TF0, TF8, TF1), (TF1, TF0, TF0, TF8, TF1), (TF2, TF1, TF1, TF8, TF1))</u>

[5.4.1.43.2.4.5.4.1.43.2.2.](#) **Physical channel parameters**

DPCH Downlink	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

5.4.1.44. 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**

5.4.1.44.1. Uplink

5.4.1.44.1.1. Transport channel parameters

5.4.1.44.1.1.5.4.1.44.1.1.1. Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB

See 5.4.1.4.1.1.1

5.4.1.44.1.2.5.4.1.44.1.1.2. Transport channel parameters for Interactive or background / UL:128 kbps / PS RAB

See 5.4.1.28.1.1.1

5.4.1.44.1.3.5.4.1.44.1.1.3. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.1

5.4.1.44.1.1.4. TFCS

<u>TFCS size</u>	<u>30</u>
<u>TFCS</u>	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 128 kbps RAB, DCCH)= <u>(TF0, TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0, TF0), (TF2, TF1, TF1, TF0, TF0),</u> <u>(TF0, TF0, TF0, TF1, TF0), (TF1, TF0, TF0, TF1, TF0), (TF2, TF1, TF1, TF1, TF0),</u> <u>(TF0, TF0, TF0, TF2, TF0), (TF1, TF0, TF0, TF2, TF0), (TF2, TF1, TF1, TF2, TF0),</u> <u>(TF0, TF0, TF0, TF3, TF0), (TF1, TF0, TF0, TF3, TF0), (TF2, TF1, TF1, TF3, TF0),</u> <u>(TF0, TF0, TF0, TF4, TF0), (TF1, TF0, TF0, TF4, TF0), (TF2, TF1, TF1, TF4, TF0),</u> <u>(TF0, TF0, TF0, TF0, TF1), (TF1, TF0, TF0, TF0, TF1), (TF2, TF1, TF1, TF0, TF1),</u> <u>(TF0, TF0, TF0, TF1, TF1), (TF1, TF0, TF0, TF1, TF1), (TF2, TF1, TF1, TF1, TF1),</u> <u>(TF0, TF0, TF0, TF2, TF1), (TF1, TF0, TF0, TF2, TF1), (TF2, TF1, TF1, TF2, TF1),</u> <u>(TF0, TF0, TF0, TF3, TF1), (TF1, TF0, TF0, TF3, TF1), (TF2, TF1, TF1, TF3, TF1),</u> <u>(TF0, TF0, TF0, TF4, TF1), (TF1, TF0, TF0, TF4, TF1), (TF2, TF1, TF1, TF4, TF1)</u>

5.4.1.44.1.4.5.4.1.44.1.2. Physical channel parameters

DPCH Uplink	Min spreading factor	8
	Max number of DPDCH data bits/radio frame	4800
	Puncturing Limit	<u>0.92</u>

5.4.1.44.2. Downlink

5.4.1.44.2.1. Transport channel parameters

5.4.1.44.2.1.5.4.1.44.2.1.1. Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See 5.4.1.4.2.1.1

5.4.1.44.2.2.5.4.1.44.2.1.2. Transport channel parameters for Interactive or background / DL:2048 kbps / PS RAB

See 5.4.1.35.2.1.1

5.4.1.44.2.3.5.4.1.44.2.1.3. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

	<u>(TF0, TF0, TF0, TF15, TF1), (TF1, TF0, TF0, TF15, TF1), (TF2, TF1, TF1, TF15, TF1),</u> <u>(TF0, TF0, TF0, TF16, TF1), (TF1, TF0, TF0, TF16, TF1), (TF2, TF1, TF1, TF16, TF1),</u> <u>(TF0, TF0, TF0, TF17, TF1), (TF1, TF0, TF0, TF17, TF1), (TF2, TF1, TF1, TF17, TF1),</u> <u>(TF0, TF0, TF0, TF18, TF1), (TF1, TF0, TF0, TF18, TF1), (TF2, TF1, TF1, TF18, TF1))</u>
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5.4.1.44.2.4.5.4.1.44.2.2. Physical channel parameters

DPCH Downlink	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

5.4.1.45. 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

5.4.1.45.1. Uplink

5.4.1.45.1.1. Transport channel parameters

5.4.1.45.1.1.5.4.1.45.1.1.1. Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB

See 5.4.1.4.1.1.1

5.4.1.45.1.2.5.4.1.45.1.1.2. Transport channel parameters for Streaming / unknown / UL:57.6 kbps / CS RAB

See 5.4.1.17.1.1.1

5.4.1.45.1.3.5.4.1.45.1.1.3. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.1

5.4.1.45.1.1.4. TFCS

<u>TFCS size</u>	<u>30</u>
<u>TFCS</u>	<u>(RAB subflow#1, RAB subflow#2, RAB subflow#3, 57.6 kbps RAB, DCCH)= (TF0, TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0, TF0), (TF2, TF1, TF1, TF0, TF0), (TF0, TF0, TF0, TF1, TF0), (TF1, TF0, TF0, TF1, TF0), (TF2, TF1, TF1, TF1, TF0), (TF0, TF0, TF0, TF2, TF0), (TF1, TF0, TF0, TF2, TF0), (TF2, TF1, TF1, TF2, TF0), (TF0, TF0, TF0, TF3, TF0), (TF1, TF0, TF0, TF3, TF0), (TF2, TF1, TF1, TF3, TF0), (TF0, TF0, TF0, TF4, TF0), (TF1, TF0, TF0, TF4, TF0), (TF2, TF1, TF1, TF4, TF0), (TF0, TF0, TF0, TF0, TF1), (TF1, TF0, TF0, TF0, TF1), (TF2, TF1, TF1, TF0, TF1), (TF0, TF0, TF0, TF1, TF1), (TF1, TF0, TF0, TF1, TF1), (TF2, TF1, TF1, TF1, TF1), (TF0, TF0, TF0, TF2, TF1), (TF1, TF0, TF0, TF2, TF1), (TF2, TF1, TF1, TF2, TF1), (TF0, TF0, TF0, TF3, TF1), (TF1, TF0, TF0, TF3, TF1), (TF2, TF1, TF1, TF3, TF1), (TF0, TF0, TF0, TF4, TF1), (TF1, TF0, TF0, TF4, TF1), (TF2, TF1, TF1, TF4, TF1)</u>

5.4.1.45.1.4.5.4.1.45.1.2. Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	1

5.4.1.45.2. Downlink

5.4.1.45.2.1. Transport channel parameters

5.4.1.45.2.1.5.4.1.45.2.1.1. Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See 5.4.1.4.2.1.1

5.4.1.45.2.2.5.4.1.45.2.1.2. Transport channel parameters for Streaming / unknown / DL:57.6 kbps / CS RAB

See 5.4.1.17.2.1.1

5.4.1.45.2.3.5.4.1.45.2.1.3. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.1.45.2.1.4. TFCS

<u>TFCS size</u>	<u>30</u>
<u>TFCS</u>	<u>(RAB subflow#1, RAB subflow#2, RAB subflow#3, 57.6 kbps RAB, DCCH)=</u> <u>(TF0, TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0, TF0), (TF2, TF1, TF1, TF0, TF0),</u> <u>(TF0, TF0, TF0, TF1, TF0), (TF1, TF0, TF0, TF1, TF0), (TF2, TF1, TF1, TF1, TF0),</u> <u>(TF0, TF0, TF0, TF2, TF0), (TF1, TF0, TF0, TF2, TF0), (TF2, TF1, TF1, TF2, TF0),</u> <u>(TF0, TF0, TF0, TF3, TF0), (TF1, TF0, TF0, TF3, TF0), (TF2, TF1, TF1, TF3, TF0),</u> <u>(TF0, TF0, TF0, TF4, TF0), (TF1, TF0, TF0, TF4, TF0), (TF2, TF1, TF1, TF4, TF0),</u> <u>(TF0, TF0, TF0, TF0, TF1), (TF1, TF0, TF0, TF0, TF1), (TF2, TF1, TF1, TF0, TF1),</u> <u>(TF0, TF0, TF0, TF1, TF1), (TF1, TF0, TF0, TF1, TF1), (TF2, TF1, TF1, TF1, TF1),</u> <u>(TF0, TF0, TF0, TF2, TF1), (TF1, TF0, TF0, TF2, TF1), (TF2, TF1, TF1, TF2, TF1),</u> <u>(TF0, TF0, TF0, TF3, TF1), (TF1, TF0, TF0, TF3, TF1), (TF2, TF1, TF1, TF3, TF1),</u> <u>(TF0, TF0, TF0, TF4, TF1), (TF1, TF0, TF0, TF4, TF1), (TF2, TF1, TF1, TF4, TF1)</u>

5.4.1.45.2.4.5.4.1.45.2.2. Physical channel parameters

DPCH Uplink	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

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

5.4.1.46.1. Uplink

See 5.4.1.4.1.

5.4.1.46.2. Downlink

5.4.1.46.2.1. Transport channel parameters

5.4.1.46.2.1.5.4.1.46.2.1.1. Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See 5.4.1.4.2.1.1

5.4.1.46.2.2.5.4.1.46.2.1.2. Transport channel parameters for Streaming / unknown / DL:64 kbps / CS or PS RAB

See 5.4.1.18.2.1.1

5.4.1.46.2.3.5.4.1.46.2.1.3. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.1.46.2.1.4. TFCS

TFCS size	30
TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 64 kbps RAB, DCCH)= (TF0, TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0, TF0), (TF2, TF1, TF1, TF0, TF0), (TF0, TF0, TF0, TF1, TF0), (TF1, TF0, TF0, TF1, TF0), (TF2, TF1, TF1, TF1, TF0), (TF0, TF0, TF0, TF2, TF0), (TF1, TF0, TF0, TF2, TF0), (TF2, TF1, TF1, TF2, TF0), (TF0, TF0, TF0, TF3, TF0), (TF1, TF0, TF0, TF3, TF0), (TF2, TF1, TF1, TF3, TF0), (TF0, TF0, TF0, TF4, TF0), (TF1, TF0, TF0, TF4, TF0), (TF2, TF1, TF1, TF4, TF0), (TF0, TF0, TF0, TF0, TF1), (TF1, TF0, TF0, TF0, TF1), (TF2, TF1, TF1, TF0, TF1), (TF0, TF0, TF0, TF1, TF1), (TF1, TF0, TF0, TF1, TF1), (TF2, TF1, TF1, TF1, TF1), (TF0, TF0, TF0, TF2, TF1), (TF1, TF0, TF0, TF2, TF1), (TF2, TF1, TF1, TF2, TF1), (TF0, TF0, TF0, TF3, TF1), (TF1, TF0, TF0, TF3, TF1), (TF2, TF1, TF1, TF3, TF1), (TF0, TF0, TF0, TF4, TF1), (TF1, TF0, TF0, TF4, TF1), (TF2, TF1, TF1, TF4, TF1)

5.4.1.46.2.4.5.4.1.46.2.2. 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	

5.4.1.47. 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

5.4.1.47.1. Uplink

See 5.4.1.4.1

5.4.1.47.2. Downlink

5.4.1.47.2.1. Transport channel parameters

5.4.1.47.2.1.1. Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See 5.4.1.4.2.1.1

5.4.1.47.2.2. Transport channel parameters for Streaming / unknown / DL:128 kbps / CS or PS RAB

See 5.4.1.20.2.1.1

5.4.1.47.2.3. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.1.47.2.1.4. TFCS

<u>TFCS size</u>	<u>36</u>
<u>TFCS</u>	<u>(RAB subflow#1, RAB subflow#2, RAB subflow#3, 128 kbps RAB, DCCH)= (TF0, TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0, TF0), (TF2, TF1, TF1, TF0, TF0), (TF0, TF0, TF0, TF1, TF0), (TF1, TF0, TF0, TF1, TF0), (TF2, TF1, TF1, TF1, TF0), (TF0, TF0, TF0, TF2, TF0), (TF1, TF0, TF0, TF2, TF0), (TF2, TF1, TF1, TF2, TF0), (TF0, TF0, TF0, TF3, TF0), (TF1, TF0, TF0, TF3, TF0), (TF2, TF1, TF1, TF3, TF0), (TF0, TF0, TF0, TF4, TF0), (TF1, TF0, TF0, TF4, TF0), (TF2, TF1, TF1, TF4, TF0), (TF0, TF0, TF0, TF5, TF0), (TF1, TF0, TF0, TF5, TF0), (TF2, TF1, TF1, TF5, TF0), (TF0, TF0, TF0, TF0, TF1), (TF1, TF0, TF0, TF0, TF1), (TF2, TF1, TF1, TF0, TF1), (TF0, TF0, TF0, TF1, TF1), (TF1, TF0, TF0, TF1, TF1), (TF2, TF1, TF1, TF1, TF1), (TF0, TF0, TF0, TF2, TF1), (TF1, TF0, TF0, TF2, TF1), (TF2, TF1, TF1, TF2, TF1), (TF0, TF0, TF0, TF3, TF1), (TF1, TF0, TF0, TF3, TF1), (TF2, TF1, TF1, TF3, TF1), (TF0, TF0, TF0, TF4, TF1), (TF1, TF0, TF0, TF4, TF1), (TF2, TF1, TF1, TF4, TF1), (TF0, TF0, TF0, TF5, TF1), (TF1, TF0, TF0, TF5, TF1), (TF2, TF1, TF1, TF5, TF1)</u>

5.4.1.47.2.4. 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

5.4.1.48. 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

5.4.1.48.1. Uplink

See 5.4.1.4.1

5.4.1.48.2. Downlink

5.4.1.48.2.1. Transport channel parameters

5.4.1.48.2.1.5.4.1.48.2.1.1. Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See 5.4.1.4.2.1.1

5.4.1.48.2.2.5.4.1.48.2.1.2. Transport channel parameters for Streaming / unknown / DL:384 kbps / CS or PS RAB

See 5.4.1.22.2.1.1

5.4.1.48.2.3.5.4.1.48.2.1.3. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.1.48.2.1.4. TFCS

<u>TFCS size</u>	48
<u>TFCS</u>	(RAB subflow#1, RAB subflow#2, RAB subflow#3, 384 kbps RAB , DCCH)= <u>(TF0, TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0, TF0), (TF2, TF1, TF1, TF0, TF0),</u> <u>(TF0, TF0, TF0, TF1, TF0), (TF1, TF0, TF0, TF1, TF0), (TF2, TF1, TF1, TF1, TF0),</u> <u>(TF0, TF0, TF0, TF2, TF0), (TF1, TF0, TF0, TF2, TF0), (TF2, TF1, TF1, TF2, TF0),</u> <u>(TF0, TF0, TF0, TF3, TF0), (TF1, TF0, TF0, TF3, TF0), (TF2, TF1, TF1, TF3, TF0),</u> <u>(TF0, TF0, TF0, TF4, TF0), (TF1, TF0, TF0, TF4, TF0), (TF2, TF1, TF1, TF4, TF0),</u> <u>(TF0, TF0, TF0, TF5, TF0), (TF1, TF0, TF0, TF5, TF0), (TF2, TF1, TF1, TF5, TF0),</u> <u>(TF0, TF0, TF0, TF6, TF0), (TF1, TF0, TF0, TF6, TF0), (TF2, TF1, TF1, TF6, TF0),</u> <u>(TF0, TF0, TF0, TF7, TF0), (TF1, TF0, TF0, TF7, TF0), (TF2, TF1, TF1, TF7, TF0),</u> <u>(TF0, TF0, TF0, TF0, TF1), (TF1, TF0, TF0, TF0, TF1), (TF2, TF1, TF1, TF0, TF1),</u> <u>(TF0, TF0, TF0, TF1, TF1), (TF1, TF0, TF0, TF1, TF1), (TF2, TF1, TF1, TF1, TF1),</u> <u>(TF0, TF0, TF0, TF2, TF1), (TF1, TF0, TF0, TF2, TF1), (TF2, TF1, TF1, TF2, TF1),</u> <u>(TF0, TF0, TF0, TF3, TF1), (TF1, TF0, TF0, TF3, TF1), (TF2, TF1, TF1, TF3, TF1),</u> <u>(TF0, TF0, TF0, TF4, TF1), (TF1, TF0, TF0, TF4, TF1), (TF2, TF1, TF1, TF4, TF1),</u> <u>(TF0, TF0, TF0, TF5, TF1), (TF1, TF0, TF0, TF5, TF1), (TF2, TF1, TF1, TF5, TF1),</u> <u>(TF0, TF0, TF0, TF6, TF1), (TF1, TF0, TF0, TF6, TF1), (TF2, TF1, TF1, TF6, TF1),</u> <u>(TF0, TF0, TF0, TF7, TF1), (TF1, TF0, TF0, TF7, TF1), (TF2, TF1, TF1, TF7, TF1)</u>

5.4.1.48.2.4.5.4.1.48.2.2. 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

5.4.1.49. 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

5.4.1.49.1. Uplink

5.4.1.49.1.1. Transport channel parameters

5.4.1.49.1.1.5.4.1.49.1.1.1. Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB

See 5.4.1.4.1.1.1

5.4.1.49.1.2.5.4.1.49.1.1.2. Transport channel parameters for Conversational / unknown / UL:64 kbps / CS RAB

See 5.4.1.13.1.1.1

5.4.1.49.1.3.5.4.1.49.1.1.3. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.1

5.4.1.49.1.1.4. TFCS

<u>TFCS size</u>	<u>12</u>
<u>TFCS</u>	<u>(RAB subflow#1, RAB subflow#2, RAB subflow#3, 64 kbps RAB, DCCH)= (TF0, TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0, TF0), (TF2, TF1, TF1, TF0, TF0), (TF0, TF0, TF0, TF1, TF0), (TF1, TF0, TF0, TF1, TF0), (TF2, TF1, TF1, TF1, TF0), (TF0, TF0, TF0, TF0, TF1), (TF1, TF0, TF0, TF0, TF1), (TF2, TF1, TF1, TF0, TF1), (TF0, TF0, TF0, TF1, TF1), (TF1, TF0, TF0, TF1, TF1), (TF2, TF1, TF1, TF1, TF1)</u>

5.4.1.49.1.4.5.4.1.49.1.2. Physical channel parameters

DPCH Uplink	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	<u>0.72</u> 0.92

5.4.1.49.2. Downlink

5.4.1.49.2.1. Transport channel parameters

5.4.1.49.2.1.5.4.1.49.2.1.1. Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See 5.4.1.4.2.1.1

5.4.1.49.2.2.5.4.1.49.2.1.2. Transport channel parameters for Conversational / unknown / DL:64 kbps / CS RAB

See 5.4.1.13.2.1.1

5.4.1.49.2.3.5.4.1.49.2.1.3. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.1.49.2.1.4. TFCS

<u>TFCS size</u>	<u>12</u>
<u>TFCS</u>	<u>(RAB subflow#1, RAB subflow#2, RAB subflow#3, 64 kbps RAB, DCCH)=</u>

	<u>(TF0, TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0, TF0), (TF2, TF1, TF1, TF0, TF0),</u> <u>(TF0, TF0, TF0, TF1, TF0), (TF1, TF0, TF0, TF1, TF0), (TF2, TF1, TF1, TF1, TF0),</u> <u>(TF0, TF0, TF0, TF0, TF1), (TF1, TF0, TF0, TF0, TF1), (TF2, TF1, TF1, TF0, TF1),</u> <u>(TF0, TF0, TF0, TF1, TF1), (TF1, TF0, TF0, TF1, TF1), (TF2, TF1, TF1, TF1, TF1)</u>
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5.4.1.49.2.4.5.4.1.49.2.2. Physical channel parameters

DPCH Downlink	DTX position		Flexible
		Spreading factor	
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

5.4.1.50. 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

5.4.1.50.1. Uplink

5.4.1.50.1.1. Transport channel parameters

5.4.1.50.1.1.5.4.1.50.1.1.1. Transport channel parameters for Conversational / unknown / UL:64 kbps / CS RAB

See 5.4.1.13.1.1.1

5.4.1.50.1.2.5.4.1.50.1.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.1

5.4.1.50.1.1.3. TFCS

<u>TFCS size</u>	<u>8</u>
<u>TFCS</u>	<u>(64 kbps RAB, 64 kbps 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)</u>

5.4.1.50.1.3.5.4.1.50.1.2. Physical channel parameters

DPCH Uplink	Min spreading factor	8
	Max number of DPDCH data bits/radio frame	4800
	Puncturing Limit	<u>0.92+</u>

5.4.1.50.2. Downlink

5.4.1.50.2.1. Transport channel parameters

5.4.1.50.2.1.5.4.1.50.2.1.1. Transport channel parameters for Conversational / unknown / DL:64 kbps / CS RAB

See 5.4.1.13.2.1.1

5.4.1.50.2.2.5.4.1.50.2.1.2. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.1.50.2.1.3. TFCS

<u>TFCS size</u>	<u>8</u>
<u>TFCS</u>	<u>(64 kbps RAB, 64 kbps 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)</u>

5.4.1.50.2.3.5.4.1.50.2.2. 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

5.4.1.51. 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**

5.4.1.51.1. Uplink

5.4.1.51.1.1. Transport channel parameters

5.4.1.51.1.1.1. Transport channel parameters for Conversational / unknown / UL:64 kbps / CS RAB

See 5.4.1.13.1.1.1

5.4.1.51.1.1.2. Transport channel parameters for Interactive or background / UL:64 kbps / PS RAB

See 5.4.1.24.1.1.1

5.4.1.51.1.1.3. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.1

5.4.1.51.1.1.4. TFCS

<u>TFCS size</u>	<u>20</u>
<u>TFCS</u>	<u>(Conv. 64 kbps RAB, I/B 64 kbps RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF2, TF0), (TF0, TF3, TF0), (TF0, TF4, TF0), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF2, TF0), (TF1, TF3, TF0), (TF1, TF4, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF0, TF2, TF1), (TF0, TF3, TF1), (TF0, TF4, TF1), (TF1, TF0, TF1), (TF1, TF1, TF1), (TF1, TF2, TF1), (TF1, TF3, TF1), (TF1, TF4, TF1)</u>

5.4.1.51.1.4.5.4.1.51.1.2. Physical channel parameters

DPCH Uplink	Min spreading factor	8
	Max number of DPDCH data bits/radio frame	4800
	Puncturing Limit	<u>0.88</u>

5.4.1.51.2. Downlink

5.4.1.51.2.1. Transport channel parameters

5.4.1.51.2.1.1. Transport channel parameters for Conversational / unknown / DL:64 kbps / CS RAB

See 5.4.1.13.2.1.1

5.4.1.51.2.1.2. Transport channel parameters for Interactive or background / DL:64 kbps / PS RAB

See 5.4.1.25.2.1.1

5.4.1.51.2.1.3. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.1.51.2.1.4. TFCS

<u>TFCS size</u>	<u>20</u>
<u>TFCS</u>	<u>(Conv. 64 kbps RAB, I/B 64 kbps RAB, DCCH)=</u>

	<u>(TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF2, TF0), (TF0, TF3, TF0), (TF0, TF4, TF0),</u> <u>(TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF2, TF0), (TF1, TF3, TF0), (TF1, TF4, TF0),</u> <u>(TF0, TF0, TF1), (TF0, TF1, TF1), (TF0, TF2, TF1), (TF0, TF3, TF1), (TF0, TF4, TF1),</u> <u>(TF1, TF0, TF1), (TF1, TF1, TF1), (TF1, TF2, TF1), (TF1, TF3, TF1), (TF1, TF4, TF1)</u>
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5.4.1.51.2.4.5.4.1.51.2.2. 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

5.4.1.52. 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**

5.4.1.52.1. Uplink

See 5.4.1.51.1

5.4.1.52.2. Downlink

5.4.1.52.2.1. Transport channel parameters

5.4.1.52.2.1.5.4.1.52.2.1.1. Transport channel parameters for Conversational / unknown / DL:64 kbps / CS RAB

See 5.4.1.13.2.1.1

5.4.1.52.2.2.5.4.1.52.2.1.2. Transport channel parameters for Interactive or background / DL:128 kbps / PS RAB

See 5.4.1.27.2.1.1

5.4.1.52.2.3.5.4.1.52.2.1.3. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.1.52.2.1.4. TFCS

<u>TFCS size</u>	<u>20</u>
<u>TFCS</u>	<u>(Conv. 64 kbps RAB, I/B 128 kbps RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF2, TF0), (TF0, TF3, TF0), (TF0, TF4, TF0), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF2, TF0), (TF1, TF3, TF0), (TF1, TF4, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF0, TF2, TF1), (TF0, TF3, TF1), (TF0, TF4, TF1), (TF1, TF0, TF1), (TF1, TF1, TF1), (TF1, TF2, TF1), (TF1, TF3, TF1), (TF1, TF4, TF1)</u>

5.4.1.52.2.4.5.4.1.52.2.2. 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	

5.4.1.53. 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**

5.4.1.53.1. Uplink

5.4.1.53.1.1. Transport channel parameters

5.4.1.53.1.1.1. Transport channel parameters for Conversational / unknown / UL:64 kbps / CS RAB

See 5.4.1.13.1.1.1

5.4.1.53.1.1.2. Transport channel parameters for Interactive or background / UL:128 kbps / PS RAB

See 5.4.1.28.1.1.1

5.4.1.53.1.1.3. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.1

5.4.1.53.1.1.4. TFCS

<u>TFCS size</u>	<u>20</u>
<u>TFCS</u>	<u>(Conv. 64 kbps RAB, I/B 128kbps RAB, DCCH)= (TF0, TF0, TF0), (TF0, TF1, TF0), (TF0, TF2, TF0), (TF0, TF3, TF0), (TF0, TF4, TF0), (TF1, TF0, TF0), (TF1, TF1, TF0), (TF1, TF2, TF0), (TF1, TF3, TF0), (TF1, TF4, TF0), (TF0, TF0, TF1), (TF0, TF1, TF1), (TF0, TF2, TF1), (TF0, TF3, TF1), (TF0, TF4, TF1), (TF1, TF0, TF1), (TF1, TF1, TF1), (TF1, TF2, TF1), (TF1, TF3, TF1), (TF1, TF4, TF1)</u>

5.4.1.53.1.4.5.4.1.53.1.2. Physical channel parameters

DPCH Uplink	Min spreading factor	4
	Max number of DPDCH data bits/radio frame	9600
	Puncturing Limit	1

5.4.1.53.2. Downlink

See 5.4.1.52.2

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

5.4.1.54.1. Uplink

See 5.4.1.24.1

5.4.1.54.2. Downlink

5.4.1.54.2.1. Transport channel parameters

5.4.1.54.2.1.5.4.1.54.2.1.1. Transport channel parameters for Interactive or background / DL:128 kbps / PS RAB

See 5.4.1.27.2.1.1

5.4.1.54.2.2.5.4.1.54.2.1.2. Transport channel parameters for Streaming / unknown / DL:64 kbps / CS or PS RAB

See 5.4.1.18.2.1.1

5.4.1.54.2.3.5.4.1.54.2.1.3. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.1.54.2.1.4. TFCS

<u>TFCS size</u>	<u>50</u>
<u>TFCS</u>	<u>(I/B 128 kbps RAB, Str. 64 kbps RAB, DCCH)= (TF0, TF0, TF0), (TF1, TF0, TF0), (TF2, TF0, TF0), (TF3, TF0, TF0), (TF4, TF0, TF0), (TF0, TF1, TF0), (TF1, TF1, TF0), (TF2, TF1, TF0), (TF3, TF1, TF0), (TF4, TF1, TF0), (TF0, TF2, TF0), (TF1, TF2, TF0), (TF2, TF2, TF0), (TF3, TF2, TF0), (TF4, TF2, TF0), (TF0, TF3, TF0), (TF1, TF3, TF0), (TF2, TF3, TF0), (TF3, TF3, TF0), (TF4, TF3, TF0), (TF0, TF4, TF0), (TF1, TF4, TF0), (TF2, TF4, TF0), (TF3, TF4, TF0), (TF4, TF4, TF0), (TF0, TF0, TF1), (TF1, TF0, TF1), (TF2, TF0, TF1), (TF3, TF0, TF1), (TF4, TF0, TF1), (TF0, TF1, TF1), (TF1, TF1, TF1), (TF2, TF1, TF1), (TF3, TF1, TF1), (TF4, TF1, TF1), (TF0, TF2, TF1), (TF1, TF2, TF1), (TF2, TF2, TF1), (TF3, TF2, TF1), (TF4, TF2, TF1), (TF0, TF3, TF1), (TF1, TF3, TF1), (TF2, TF3, TF1), (TF3, TF3, TF1), (TF4, TF3, TF1), (TF0, TF4, TF1), (TF1, TF4, TF1), (TF2, TF4, TF1), (TF3, TF4, TF1), (TF4, TF4, TF1)</u>

5.4.1.54.2.4.5.4.1.54.2.2. 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	

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

5.4.1.55.1. Uplink

See 5.4.1.24.1

5.4.1.55.2. Downlink

5.4.1.55.2.1. Transport channel parameters

5.4.1.55.2.1.5.4.1.55.2.1.1. Transport channel parameters for Interactive or background / DL:128 kbps / PS RAB

See 5.4.1.27.2.1.1

5.4.1.55.2.2.5.4.1.55.2.1.2. Transport channel parameters for Streaming / unknown / DL:128 kbps / CS or PS RAB

See 5.4.1.20.2.1.1

5.4.1.55.2.3.5.4.1.55.2.1.3. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.1.55.2.1.4. TFCS

<u>TFCS size</u>	<u>60</u>
<u>TFCS</u>	<u>(I/B 128 kbps RAB, Str. 128 kbps RAB, DCCH)=</u> <u>(TF0, TF0, TF0), (TF1, TF0, TF0), (TF2, TF0, TF0), (TF3, TF0, TF0), (TF4, TF0, TF0),</u> <u>(TF0, TF1, TF0), (TF1, TF1, TF0), (TF2, TF1, TF0), (TF3, TF1, TF0), (TF4, TF1, TF0),</u> <u>(TF0, TF2, TF0), (TF1, TF2, TF0), (TF2, TF2, TF0), (TF3, TF2, TF0), (TF4, TF2, TF0),</u> <u>(TF0, TF3, TF0), (TF1, TF3, TF0), (TF2, TF3, TF0), (TF3, TF3, TF0), (TF4, TF3, TF0),</u> <u>(TF0, TF4, TF0), (TF1, TF4, TF0), (TF2, TF4, TF0), (TF3, TF4, TF0), (TF4, TF4, TF0),</u> <u>(TF0, TF5, TF0), (TF1, TF5, TF0), (TF2, TF5, TF0), (TF3, TF5, TF0), (TF4, TF5, TF0),</u> <u>(TF0, TF0, TF1), (TF1, TF0, TF1), (TF2, TF0, TF1), (TF3, TF0, TF1), (TF4, TF0, TF1),</u> <u>(TF0, TF1, TF1), (TF1, TF1, TF1), (TF2, TF1, TF1), (TF3, TF1, TF1), (TF4, TF1, TF1),</u> <u>(TF0, TF2, TF1), (TF1, TF2, TF1), (TF2, TF2, TF1), (TF3, TF2, TF1), (TF4, TF2, TF1),</u> <u>(TF0, TF3, TF1), (TF1, TF3, TF1), (TF2, TF3, TF1), (TF3, TF3, TF1), (TF4, TF3, TF1),</u> <u>(TF0, TF4, TF1), (TF1, TF4, TF1), (TF2, TF4, TF1), (TF3, TF4, TF1), (TF4, TF4, TF1),</u> <u>(TF0, TF5, TF1), (TF1, TF5, TF1), (TF2, TF5, TF1), (TF3, TF5, TF1), (TF4, TF5, TF1)</u>

5.4.1.55.2.4.5.4.1.55.2.2. 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

5.4.2. Combinations on PDSCH and DPCH

**5.4.2.1. Interactive or background / UL:64 DL:256 kbps / PS RAB
+ UL:3.4 DL: 3.4 kbps SRBs for DCCH**

5.4.2.1.1. Uplink

See 5.4.1.24.1

5.4.2.1.2. Downlink

5.4.2.1.2.1. Transport channel parameters

5.4.2.1.2.1.1. Transport channel parameters for Interactive or background / DL:256 kbps / PS RAB

See 5.4.1.31.2.1.1

5.4.2.1.2.1.2. Transport channel parameters for DL:3.4 DL: 3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.2.1.2.1.3. TFCS

<u>PDSCH</u>	<u>TFCS size</u>	<u>5 (alt. 7)</u>
	<u>TFCS</u>	<u>256 kbps RAB = TF0, TF1, TF2, TF3, TF4 (alt. TF0, TF1, TF2, TF3, TF4, TF5, TF6)</u>
<u>DPCH Downlink associated with PDSCH</u>	<u>TFCS size</u>	<u>2</u>
	<u>TFCS</u>	<u>SRBs for DCCH = TF0, TF1</u>

5.4.2.1.2.1.3. Physical channel parameters

PDSCH	RAB or SRB, TrCh		Interactive or background / 256 kbps / PS RAB, DSCH
	DTX position		N/A (SingleTrCH)
	Spreading factor		8
DPCH Downlink associated with PDSCH	RAB or SRB, TrCh		3.4 kbps SRB for DCCH, DCH
	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. 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. Uplink

See 5.4.1.24.1

5.4.2.2.2. Downlink

5.4.2.2.2.1. Transport channel parameters

5.4.2.2.2.1.5.4.2.2.2.1.1. Transport channel parameters for Interactive or background / DL:384 kbps / PS RAB

See 5.4.1.32.2.1.1

5.4.2.2.2.2.5.4.2.2.2.1.2. Transport channel parameters for DL:3.4 DL: 3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.2.2.2.1.3. TFCS

<u>PDSCH</u>	<u>TFCS size</u>	6 (alt.9)
	<u>TFCS</u>	<u>384 kbps RAB = TF0, TF1, TF2, TF3, TF4, TF5 (alt. TF0, TF1, TF2, TF3, TF4, TF5, TF6, TF7, TF8)</u>
<u>DPCH Downlink associated with PDSCH</u>	<u>TFCS size</u>	2
	<u>TFCS</u>	<u>SRBs for DCCH = TF0, TF1</u>

5.4.2.2.2.3.5.4.2.2.2.2. Physical channel parameters

PDSCH	RAB or SRB, TrCh	Interactive or background / 384 kbps / PS RAB, DSCH	
	DTX position	N/A (SingleTrCH)	
	Spreading factor	8	
DPCH Downlink associated with PDSCH	RAB or SRB, TrCh	3.4 kbps SRB for DCCH, DCH	
	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	

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

5.4.2.3.1. Uplink

See 5.4.1.24.1.

5.4.2.3.2. Downlink

5.4.2.3.2.1. Transport channel parameters

5.4.2.3.2.1.1. Transport channel parameters for Interactive or background / DL:2048 kbps / PS RAB

See 5.4.1.35.2.1.1

5.4.2.3.2.1.2. Transport channel parameters for DL:3.4 DL: 3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.2.3.2.1.3. TFCS

<u>PDSCH</u>	<u>TFCS size</u>	<u>11 (alt.19)</u>
	<u>TFCS</u>	<u>2048 kbps RAB = TF0, TF1, TF2, TF3, TF4, TF5, TF6, TF7, TF8, TF9, TF10 (alt. TF0, TF1, TF2, TF3, TF4, TF5, TF6, TF7, TF8, TF9, TF10, TF11, TF12, TF13, TF14, TF15, TF16, TF17, TF18)</u>
<u>DPCH Downlink associated with PDSCH</u>	<u>TFCS size</u>	<u>2</u>
	<u>TFCS</u>	<u>SRBs for DCCH = TF0, TF1</u>

5.4.2.3.2.2. Physical channel parameters

PDSCH	RAB or SRB, TrCh		Interactive or background / 2048 kbps / PS RAB, DSCH
	DTX position		N/A (SingleTrCH)
	Spreading factor		4
DPCH Downlink associated with PDSCH	RAB or SRB, TrCh		3.4 kbps SRB for DCCH, DCH
	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	

5.4.2.4. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
+ Interactive or background / UL:64 DL:256 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.2.4.1. Uplink

See 5.4.1.40.1

5.4.2.4.2. Downlink

5.4.2.4.2.1. Transport channel parameters

5.4.2.4.2.1.5.4.2.4.2.1.1. Transport channel parameters for Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB

See 5.4.1.4.2.1.1

5.4.2.4.2.2.5.4.2.4.2.1.2. Transport channel parameters for Interactive or background / DL:256 kbps / PS RAB

See 5.4.1.31.2.1.1

5.4.2.4.2.3.5.4.2.4.2.1.3. Transport channel parameters for DL:3.4 DL: 3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.2.4.2.1.4. TFCS

<u>PDSCH</u>	<u>TFCS size</u>	<u>5 (alt.7)</u>
	<u>TFCS</u>	<u>256 kbps RAB = TF0, TF1, TF2, TF3, TF4 (alt. TF0, TF1, TF2, TF3, TF4, TF5, TF6)</u>
<u>DPCH Downlink associated with PDSCH</u>	<u>TFCS size</u>	<u>6</u>
	<u>TFCS</u>	<u>(RAB subflow#1, RAB subflow#2, RAB subflow#3, DCCH) = (TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0), (TF2, TF1, TF1, TF0), (TF0, TF0, TF0, TF1), (TF1, TF0, TF0, TF1), (TF2, TF1, TF1, TF1)</u>

5.4.2.4.2.4.5.4.2.4.2.2. Physical channel parameters

PDSCH	RAB or SRB, TrCh	Interactive or background / 256 kbps / PS RAB, DSCH	
	DTX position	N/A (SingleTrCH)	
	Spreading factor	84	
DPCH Downlink	RAB or SRB, TrCh	Conversational / speech / 12.2 kbps / CS RAB, DCH + 3.4 kbps SRBs for DCCH. DCH	
	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	

**5.4.2.5. 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**

5.4.2.5.1. Uplink

See 5.4.1.40.1

5.4.2.5.2. Downlink

5.4.2.5.2.1. Transport channel parameters

5.4.2.5.2.1.5.4.2.5.2.1.1. Transport channel parameters for Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB

See 5.4.1.4.2.1.1

5.4.2.5.2.2.5.4.2.5.2.1.2. Transport channel parameters for Interactive or background / DL:384 kbps / PS RAB

See 5.4.1.32.2.1.1

5.4.2.5.2.3.5.4.2.5.2.1.3. Transport channel parameters for DL:3.4 DL: 3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.2.5.2.1.4. TFCS

PDSCH	TFCS size	6 (alt.9)
	TFCS	384 kbps RAB = TF0, TF1, TF2, TF3, TF4, TF5 (alt. TF0, TF1, TF2, TF3, TF4, TF5, TF6, TF7, TF8)
DPCH Downlink associated with PDSCH	TFCS size	6
	TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, DCCH) = (TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0), (TF2, TF1, TF1, TF0), (TF0, TF0, TF0, TF1), (TF1, TF0, TF0, TF1), (TF2, TF1, TF1, TF1)

5.4.2.5.2.4.5.4.2.5.2.2. Physical channel parameters

PDSCH	RAB or SRB, TrCh	Interactive or background / 384 kbps / PS RAB, DSCH	
	DTX position	N/A (SingleTrCH)	
	Spreading factor	8	
DPCH Downlink	RAB or SRB, TrCh	Conversational / speech / 12.2 kbps / CS RAB, DCH + 3.4 kbps SRBs for DCCH. DCH	
	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	

5.4.2.6. 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

5.4.2.6.1. Uplink

See 5.4.1.40.1

5.4.2.6.2. Downlink

5.4.2.6.2.1. Transport channel parameters

5.4.2.6.2.1.1. Transport channel parameters for Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB

See 5.4.1.4.2.1.1

5.4.2.6.2.2. Transport channel parameters for Interactive or background / DL:2048 kbps / PS RAB

See 5.4.1.35.2.1.1

5.4.2.6.2.3. Transport channel parameters for DL:3.4 DL: 3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.1

5.4.2.6.2.1.4. TFCS

PDSCH	TFCS size	11 (alt.19)
	TFCS	2048 kbps RAB =TF0, TF1, TF2, TF3, TF4, TF5, TF6, TF7, TF8, TF9, TF10 (alt. TF0, TF1, TF2, TF3, TF4, TF5, TF6, TF7, TF8, TF9, TF10, TF11, TF12, TF13, TF14, TF15, TF16, TF17, TF18)
DPCH Downlink associated with PDSCH	TFCS size	6
	TFCS	(RAB subflow#1, RAB subflow#2, RAB subflow#3, DCCH) = (TF0, TF0, TF0, TF0), (TF1, TF0, TF0, TF0), (TF2, TF1, TF1, TF0), (TF0, TF0, TF0, TF1), (TF1, TF0, TF0, TF1), (TF2, TF1, TF1, TF1)

5.4.2.6.2.4. Physical channel parameters

PDSCH	RAB or SRB, TrCh		Interactive or background / 2048 kbps / PS RAB, DSCH	
	DTX position		N/A (SingleTrCh)	
	Spreading factor		4	
DPCH Downlink	RAB or SRB, TrCh		Conversational / speech / 12.2 kbps / CS RAB, DCH + 3.4 kbps SRBs for DCCH, DCH	
	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 parameters

5.4.3.1.1.1. Transport channel parameter of SRB for PCCH

Higher layer	RAB/signalling RB	SRB	
	User of Radio Bearer	RRC	
RLC	Logical channel type	PCCH	
	RLC mode	TM	
	Payload sizes, bit	240 (alt. 80)	
	Max data rate, bps	24000 (alt. 8000)	
	RLC header, bit	0	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	PCH	
	TB sizes, bit	240 (alt. 80)	
	TFS	TF ₀ , bits	0x240 (alt. 0x80)
		TF ₁ , bits	1x240 (alt. 1x80)
	TTI, ms	10	
	Coding type	CC 1/2	
	CRC, bit	16	
	Max number of bits/TTI before rate matching	528 (alt. 208)	
	RM attribute	210-250 TBD	

5.4.3.1.1.2. TFCS

TFCS size	2
TFCS	SRBs for PCCH = TF0, TF1

5.4.3.1.2. Physical channel parameters

SCCPCH	DTX position		N/A (SingleTrCH)
	Spreading factor		128(alt. 256)
	DPCCH	Number of TFCI bits/slot	0
		Number of Pilot bits/slot	0
	DPDCH	Number of data bits/slot	40(alt. 20)
		Number of data bits/frame	600(alt. 300)

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

5.4.3.2.1. Transport channel parameters

5.4.3.2.1.1. Transport channel parameters for Interactive/Background 32 kbps PS RAB

Higher layer	RAB/signalling RB	RAB		
	User of Radio Bearer	Interactive/ Background 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	24		
	MAC multiplexing	N/A		
Layer 1	TrCH type	FACH		
	TB sizes, bit	360		
	TFS	TF0, bits	0x360	
		TF1, bits	1x360	
	TTI, ms	10		
	Coding type	TC		
	CRC, bit	16		
	Max number of bits/TTI before rate matching	1140		
RM attribute	<u>110-150</u> TBD			

5.4.3.2.2. Transport channel parameters of SRBs for CCCH, SRB for DCCH, and SRB for BCCH

Higher layer	RAB/signalling RB	SRB#1	SRB#2	SRB#3	SRB#4	SRB#5	SRB#6	
	User of Radio Bearer	RRC	RRC	RRC	NAS_DT High prio	NAS_DT Low prio	RRC	
RLC	Logical channel type	CCCH	DCCH	DCCH	DCCH	DCCH	BCCH	
	RLC mode	UM	UM	AM	AM	AM	TM	
	Payload sizes, bit	152	136 <u>or</u> <u>120*</u>	128	128	128	166	
	Max data rate, bps	<u>30400</u> (alt. 45600)	<u>27200 or</u> <u>2400 (alt.</u> <u>40800 or</u> <u>36000)</u>	<u>25600</u> (alt. 38400)	<u>25600</u> (alt. 38400)	<u>25600</u> (alt. 38400)	<u>33200</u> (alt. 49800)	
	RLC header, bit	8	8	16	16	16	0	
MAC	MAC header, bit	8	24 <u>or</u> 40	24	24	24	2	
	MAC multiplexing	6 logical channel multiplexing						
Layer 1	TrCH type	FACH						
	TB sizes, bit	168						
	TFS	TF0, bits	0x168					
		TF1, bits	1x168					
		TF2, bits	2x168					
		(alt. TF3, bits)	<u>N/A</u> (alt. 3x168)					
	TTI, ms	10						
	Coding type	CC 1/2						
CRC, bit	16							
Max number of bits/TTI before rate matching	752 (alt. 1136)							
RM attribute	<u>200-240</u> TBD							

* MAC header size and PLC payload size depend on use of U-RNTI or C-RNTI.

5.4.3.2.1.3. TFCS

<u>TFCS size</u>	<u>4, 5, or 6</u>
<u>TFCS</u>	<u>(32kbps RAB, SRBs for CCCH/DCCH/BCCH) = (TF0, TF0), (TF0, TF1), (TF0, TF2), [TF0, TF3]*, (TF1, TF0), [TF1, TF1]*</u>

* These TFCs are available only if SCCPCH can be allocated bigger Tx power than required Tx power for TFC of $1x360 + 0x168$.

5.4.3.2.3.5.4.3.2.2. **Physical channel parameters**

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

* These TFCs are available only if SCCPCH is allocated bigger Tx power than required Tx power for TFC of $1x360 + 0x168$.

5.4.3.3. Interactive/Background 32 kbps RAB + SRB for PCCH + SRB for CCCH + SRB for DCCH + SRB for BCCH

5.4.3.3.1. Transport channel parameters

5.4.3.3.1.1. Transport channel parameters of SRB for Interactive/Background 32 kbps RAB

See 5.4.3.2.1

5.4.3.3.2. Transport channel parameters of SRB for PCCH

See 5.4.3.1.1

5.4.3.3.3. Transport channel parameters of SRBs for CCCH, SRB for DCCH, and SRB for BCCH

See 5.4.3.2.1.2

5.4.3.3.1.4. TFCS

TFCS size	<u>6 or 7 for 240 bits PCH TrBlk size (alt. 6, 7, 8, 9, 10, or 11 for 80 bits PCH TrBlk size)</u>
TFCS	<u>(32 kbps RAB, SRB for PCCH, SRBs for CCCH/ DCCH/ BCCH) = (TF0, TF0, TF0), (TF0, TF0, TF1), (TF0, TF0, TF2), [TF0, TF0, TF3]*, (TF0, TF1, TF0), (TF0, TF1, TF1), [TF0, TF1, TF2]*, (TF1, TF0, TF0), [TF1, TF0, TF1]* (alt. (TF0, TF0, TF0), (TF0, TF0, TF1), (TF0, TF0, TF2), [TF0, TF0, TF3]*, (TF0, TF1, TF0), (TF0, TF1, TF1), [TF0, TF1, TF2]*, [TF0, TF1, TF3]*, (TF1, TF0, TF0), [TF1, TF0, TF1]*, [TF1, TF1, TF0]*)</u>

* These TFCs are available only if SCCPCH can be allocated bigger Tx power than required Tx power for TFC of 1x360 + 0x168.

5.4.3.3.4. Physical channel parameters

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

* These TFCs are available only if SCCPCH is allocated bigger Tx power than required Tx power for TFC of 1x360 + 0x168.

5.4.4. Combinations on PRACH

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

5.4.4.1.1. Transport channel parameters

5.4.4.1.1.1. Transport channel parameter for Interactive/Background 32 kbps PS RAB, SRB for CCCH, SRB for DCCH

Higher layer	RAB/signalling RB	RAB	SRB#1	SRB#2	SRB#3	SRB#4	SRB#5	
	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	TM	UM	AM	AM	AM	
	Payload sizes, bit	320	166	136 or 120*	128	128	128	
	Max data rate, bps	32000	16600	13600 or 12000*	12800	12800	12800	
	RLC header, bit	16	0	8	16	16	16	
MAC	MAC header, bit	24	2	24 or 40*	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	1x168					
		TF1, bits	1x360					
	TTI, ms	20 (alt. 10)						
	Coding type	CC 1/2						
	CRC, bit	16						
	Max number of bits/TTI after channel coding	768	384	384	384	384	384	
	Max number of bits/Radio frame before rate matching	384 (alt. 768)	192 (alt. 384)	192 (alt. 384)	192 (alt. 384)	192 (alt. 384)	192 (alt. 384)	

* MAC header size and PLC payload size depend on use of U-RNTI or C-RNTI.

5.4.4.1.1.2. TFCS

<u>TFCS size</u>	<u>2</u>
<u>TFCS</u>	<u>32 kbps + SRBs for CCCH/DCCH = TF0, TF1</u>

5.4.4.1.2. Physical channel parameters

PRACH	Minimum Spreading factor	64 (alt. 32)
	Max number of DPDCH data bits/radio frame	600 (alt. 1200)
	Puncturing Limit	1

<Appendix>

Overview of Typical Radio Interface Parameter Sets version 1.3

This appendix describes major changes from the Typical radio interface parameter sets version 1.2 to version 1.3 as following.

1. Stand-alone UL:3.4 DL:3.4 kbps SRBs for DCCH

Numbers of pilot bits of the slot format was changed from 8 bits to 4 bits to use shorter (1 slot) adjustment delay of feedback command for closed loop mode Tx diversity in as a big cell as possible.

2. Cprrections of TFs for AMR RAB subflow #2 and #3

In the version 1.2, AMR RAB subflow #2 and #3 have three TFs. These are error since AMR RAB subflow #2 and #3 have two TFs. These errors were corrected in the version 1.3.

3. Note *1 under the transport channel parameter tables for AMR

Note *1 under the transport channel parameter tables for AMR were changed to explain TFC detection scheme for AMR clearly.

4. CRC parity bits attachment for 0 TrBlk in UL

In the version 1.2, CRC attachment for 0 TrBlk size is applied to both UL and DL for conversational speech RAB for better outer-loop TPC performance. On the other hand, there is a concern on overhead caused by CRC OK/NG transmission during DTX on Iub if this function is applied to UL. Considering this concern, CRC attachment for 0 TrBlk size was changed to optional in the version 1.3.

5. Clarification of TFCS

A new section for TFCS was added in all RAB/SRB combinations of the version 1.3 to clarify TFCS size and TFCS. This new section was described under section "Transport channel parameters" which was also added in the version 1.3.

6. SF for PDSCH in section 5.4.2.4.2

SF for PDSCH was corrected to 8 in section 5.4.2.4.2.

7. Rate mattching attributes

Ranges of RM attributes for all RAB/SRB combinations were clarified according to simulation results. There is no TBD in the version 1.3.

8. Addition of 10 ms TTI alternative for I/B UL 384 kbps PS RAB

According to comments from 3GPP TSG RAN WG2, 10ms TTI was revived as an alternative for Interactive or Background UL 384 kbps PS RAB.

9. Addition of a new MAC header size for UM DCCH on SCCPCH

In the version 1.2, there was a mistake to revise that this addition was done in PRACH. In the version 1.3, this addition was applied to SCCPCH correctly, and the mistake in PRACH was corrected in the version 1.3.